

**Commonwealth of Kentucky
Environmental and Public Protection Cabinet
Department for Environmental Protection
Division for Air Quality
803 Schenkel Lane
Frankfort, Kentucky 40601
(502) 573-3382**

**AIR QUALITY PERMIT
Issued under 401 KAR 52:020**

Permittee Name: Catlettsburg Refining, LLC
Mailing Address: PO Box 1492
Catlettsburg, Kentucky 41129

Source Name: Same as above
Mailing Address: Same as above

Source Location: Immediately south of the I-64 & U.S. 23 intersection and
West of the Big Sandy River

Permit Number: VF-02-001 (Revision 2)
Log Number: 56022
Review Type: Synthetic Minor, Construction / Operating
Source ID #: 21-019-00004

Regional Office Ashland
County: Boyd

Issuance Date: March 29, 2002
Revision Date: April 2, 2004
Expiration Date: March 29, 2007

**John S. Lyons, Director
Division for Air Quality**

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Rev #	Permit type	Log #	Complete Date	Issuance Date	Summary of Action
----	Initial Issuance	53771	02/21/02	03/29/02	
1	Significant revision	55330	03/27/03	07/25/03	New emission units and changes to existing units.
2	Significant revision	56022	11/24/03	04/02/04	Changes to synthetic minor emission limits and compliance demonstration methods

SECTION A - PERMIT AUTHORIZATION

Pursuant to a duly submitted application the Kentucky Division for Air Quality hereby authorizes the operation of the equipment described herein in accordance with the terms and conditions of this permit. This permit has been issued under the provisions of Kentucky Revised Statutes Chapter 224 and regulations promulgated pursuant thereto.

The Permittee shall not construct, reconstruct, or modify any affected facilities without first having submitted a complete application and receiving a permit for the planned activity from the permitting authority, except as provided in this permit or in 401 KAR 52:020, Title V Permits.

Pursuant to 401 KAR 52:020, Section 7, upon discovery that any of the information submitted in the permit application is incorrect, the Permittee shall promptly submit corrected information to the Cabinet.

Issuance of this permit does not relieve the Permittee from the responsibility of obtaining any other permits, licenses, or approvals required by this Cabinet or any other federal, state, or local agency.

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS

This section of the permit lists all emissions units at the facility affected by the proposed modification and covered by this permit. This section also details the applicable regulations and operating conditions. This section is organized by the following grouping of emissions units:

- I. Process Units
- II. Combustion Devices
- III. Storage Vessels

To the extent that applicable requirements in this permit are more restrictive than corresponding requirements in existing applicable requirements, these more restrictive requirements will become effective only after the proposed modification is complete.

I. PROCESS UNITS

TABLE IA. PROCESS UNITS

PROCESS UNIT NUMBER(S)	PROCESS UNIT NAME
1-2	No. 2 Crude Unit
1-2	No. 2 Vacuum Unit
2-1	Old Fluid Catalytic Cracking Unit (FCCU)
2-2, 2-110, 2-113, 2-114	FCCU Gas Concentration Plant
2-109	New FCCU
2-23	No. 3 Crude Unit
2-26	No. 4 Vacuum Unit
2-103	Low-Pressure Vacuum Gas Oil (LPVGO) Hydrotreater
2-104	High-Pressure Vacuum Gas Oil (HPVGO) Hydrotreater
2-106, 2-107, 2-119, 2-120	Sulfur Recovery Plant
2-121	Distillate Desulfurizer
2-73	Hydrogen Generation Unit

TABLE IB. CONTROL DEVICES

EMISSION UNIT NUMBER	PROCESS UNIT NAME
2-73-FS-1	Hydrogen Plant Flare

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

HYDROGEN GENERATION UNIT**DESCRIPTION**

The Hydrogen Generation Unit (No. 2-73) is a proposed new process unit (construction commenced 2002). This unit will use pipeline-quality natural gas and water as its primary raw materials. Hydrogen will be produced by catalytically reforming the feedstock natural gas using steam and high temperatures. Residual carbon monoxide and carbon dioxide are removed using several processing steps, including pressure swing adsorption (PSA). These processes are exothermic, so the Hydrogen Generation Unit will include heat exchangers to generate steam. Most of the excess steam not consumed in the generation of hydrogen will be exported to the refinery steam distribution system. The Hydrogen Generation Unit will use approximately 16.8 million standard cubic feet per day (scf/day) of natural gas and will have a nominal hydrogen production capacity of 34 million scf/day.

The Hydrogen Generation Unit will include a Reformer Vent that will emit primarily steam, carbon dioxide, and hydrogen, with lesser amounts of VOC, CO, nitrogen, and ammonia. In addition, the Hydrogen Generation Unit will include a dedicated emergency flare and a dedicated cooling tower.

The Hydrogen Generation Unit does not include any equipment in VOC service or in organic HAP service.

APPLICABLE REGULATIONS**1. Specific Operating Limitations:**

- A. The Hydrogen Plant Emergency Flare shall not be used to control emissions from any miscellaneous process vent as that term is defined at 40 CFR 63.641. The source has elected to accept this permit condition to preclude the applicability of 40 CFR 63.11 to the Hydrogen Plant Emergency Flare.
- B. The total pumping capacity of the cooling water circulation pumps serving the Hydrogen Plant Cooling Tower shall not exceed 1,000 gallons per minute.
- C. The Hydrogen Plant Cooling Tower shall be equipped with drift eliminators designed for a maximum drift level of 0.003 percent of the total circulating water flow rate.

2. Specific Emission Limitations:

- A. The source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification. Relaxation of limitations on the capacity to emit of the equipment which were established to preclude the applicability of regulation 401 KAR 51:017, Prevention of significant deterioration of air quality, or 401 KAR 51:052, Review of new sources in or impacting upon nonattainment areas, is prohibited

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

unless the applicable provisions of these regulations have been satisfied. Alternatively, the Permittee may submit documentation that a proposed activity would not cause the change authorized to become classified as a major modification pursuant to regulations 401 KAR 51:017 or 51:052. The “synthetic minor” emission limitations for the Hydrogen Generation Unit are as follows:

Affected Units	maximum emissions (tons/yr)				
	SO ₂	NO _x	VOC	CO	PM ₁₀
Hydrogen Generation Unit (Reformer Vent)	n/a	n/a	14.5	4.6	n/a

Compliance Demonstration Method: The Permittee shall calculate for each day, in tons per year, the rolling 365-day emissions of VOC and CO, based upon an emission factor expressed in terms of pounds per million standard cubic feet of hydrogen production. The emission factor shall be calculated using the hydrogen production rate and the VOC and CO emission rates measured during the most recent performance test.

- B. The Permittee shall not allow the emission into the open air of particulate matter from the Hydrogen Plant Emergency Flare which is greater than twenty (20) percent opacity for more than three (3) minutes in any one (1) day.

3. Specific Testing Requirements:

- A. Performance testing shall be conducted to demonstrate compliance with the hydrogen generation unit reformer vent synthetic minor VOC and CO emission limitations listed above.
- B. Performance testing of the hydrogen generation unit reformer vent shall be completed within 180 days after startup of the hydrogen generation unit. The performance testing shall be conducted using the methods incorporated by reference in 401 KAR 50:015, or other methods approved by the Division.
- C. The performance test protocol required by the Division shall specify, at a minimum, the VOC test method and the procedure to be used to measure and record the hydrogen production rate.

4. Specific Monitoring Requirements: n/a

5. Specific Recordkeeping Requirements:

- A. The Permittee shall maintain daily records of daily hydrogen production rate and 365-day rolling sum hydrogen production rate.
- B. The Permittee shall calculate and maintain daily records of 365-day rolling sum VOC

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

and CO emissions from the hydrogen generation unit reformer vent, calculated using the 365-day rolling sum hydrogen production rate and the VOC and CO emission factors developed from the most recent performance test.

- C. The Permittee shall maintain records of the design maximum pumping capacity of the circulating water pumps serving the Hydrogen Plant Cooling Tower. These records shall be maintained for the life of the equipment.
- D. The Permittee shall maintain records of the maximum design drift level of the Hydrogen Plant Cooling Tower drift eliminators. These records shall be maintained for the life of the equipment.

6. Specific Reporting Requirements:

- A. The Permittee shall submit semiannually a report of the 365-day rolling sum VOC and CO emissions from the hydrogen generation unit reformer vent.

7. Specific Control Equipment Operating Conditions: n/a

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

NO. 2 CRUDE UNIT

DESCRIPTION

The No. 2 Crude Unit (No. 1-2, constructed 1977) is an atmospheric distillation process used to distill crude oil and petroleum intermediates into petroleum products and higher-value petroleum intermediates such as atmospheric gas oil. This unit, as modified (modification commenced 2002), will have a nominal capacity of 30,000 barrels per day (BPD).

The emissions from this unit are fugitive emissions from equipment leaks.

APPLICABLE REGULATIONS

The following regulations are applicable to this process unit.

401 KAR 61:137 – Leaks from Existing Petroleum Refinery Equipment

401 KAR 63:002 – (40 CFR 63 Subpart CC) National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

40 CFR 63 Subpart CC provides two compliance options for affected process units: 40 CFR 60 Subpart VV and 40 CFR 63 Subpart H. Equipment in the No. 2 Crude Unit (No. 1-2) will be subject to the 40 CFR Part 60 Subpart VV compliance option (as referenced by 40 CFR 63.648(a)). The specific requirements of Subpart VV are presented below, in the section entitled “40 CFR Part 60 Subpart VV LDAR Conditions.”

All petroleum refinery valves associated with this process unit, and determined to be in VOC service, are presumed to be in organic hazardous air pollutant (OHAP) service and therefore subject to 40 CFR Part 60 Subpart VV (40 CFR 63.648(a)(1)). For pumps, compressors, and sample stations the Permittee shall individually determine or designate which are in OHAP service. Those pumps, compressors and sample stations not in OHAP service and for which construction or modification was commenced before 4 January 1983 (40 CFR 60.590(b)) shall be subject to 401 KAR 61:137. For purposes of 40 CFR 63.648(a)(2), calculation of leaking components is performed on a process unit basis. Pursuant to 40 CFR 60.482-1(d), for equipment not in organic HAP service, as defined in 40 CFR 63.161, equipment that is in vacuum service is excluded from the requirements of 40 CFR 60.482-2 to 60.482-10 if it is identified as required in 40 CFR 60.486(e).

For purposes of 40 CFR 63 Subpart CC, a list shall be maintained of all affected process vents, as defined in 40 CFR 63.641, and their associated control devices. Certain relief valves are not process vents because (1) their operation is critical to the safe operation of the process units and (2) their emissions occur only intermittently. The process vents are exempt from any of the emission

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

standards of 40 CFR 63 Subpart CC because they are vented to one of the control options under this subpart. Further, the emissions from process vents are not considered fuel gas and therefore are not

subject to the provisions of 40 CFR 60 Subpart J. The control devices shall be maintained and operated in accordance with the provisions of 40 CFR 63 Subpart CC. Upset and blanket gases are routed to the flare system, which is compliant with the 40 CFR 63 Subpart CC provisions.

Pursuant to 40 CFR 63.640(p), equipment leaks that are also subject to the provisions of 40 CFR parts 60 and 61 are required to comply only with the provisions specified in 40 CFR 63 Subpart CC. Compliance with the standards and requirements of 40 CFR 60.482-10, as referenced by 40 CFR 63.648(a), and 40 CFR 63.644, 63.645, and 63.654, for the closed-vent and flare system is accepted as demonstrating compliance with the standards and requirements in 40 CFR 63.114, 63.118, 63.152, 63.172, and 63.181(g). Pursuant to 40 CFR 60.486(k), the provisions of 40 CFR 60.7(b) and (d) do not apply to affected facilities subject to 40 CFR 60 Subpart VV.

1. Operating Limitations:

- A. Pursuant to Regulation 40 CFR 63.138(k), for each residual removed from a Group 1 wastewater stream, as defined in 40 CFR 63.161, the Permittee shall control for air emissions by complying with 40 CFR 63.133 through 63.137 and by complying with one of the provisions below:
 - i. Recycle the residual to a production process or sell the residual for the purpose of recycling. Once a residual is returned to a production process, the residual is no longer subject to this section.
 - ii. Return the residual to the treatment process.
 - iii. Treat the residual to destroy the total combined mass flow rate of Table 8 and/or Table 9 compounds by 99 percent or more, as determined by the procedures specified in 40 CFR 63.145(c) or (d).
 - iv. Comply with the requirements for RCRA treatment options specified in 40 CFR 63.138(h).
- B. Pursuant to Regulation 401 KAR 61:137, Section 3(1), any pumps, compressors and sampling stations not in organic HAP service, nor designated in organic HAP service, for which construction or modification commenced before 4 January 1983 found to be leaking, shall be repaired within fifteen (15) days. Leaks that cannot be repaired within fifteen (15) days shall be repaired during the next scheduled turnaround. A component recheck shall be made after repair. If the leak is still present or a new leak is created by the repair, further maintenance shall be performed until the VOC emission drops below the screening value (10,000 ppm).
- C. This permit authorizes changes to the equipment in VOC service in the No. 2 Crude Unit. The authorized installation of new equipment in VOC service and required removal of equipment in VOC service are as follows:

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Component Type	# added	# removed	net change
light liquid valves	21	0	21
heavy liquid valves	0	279	-279
Connectors	84	0	84

2. **Emission Limitations:** n/a

3. **Testing Requirements:** n/a

4. **Specific Monitoring Requirements:**

- A. Pursuant to Regulation 401 KAR 61:137, Section 4, for any pumps, compressors and sampling stations not in organic HAP service, nor designated in organic HAP service, for which construction or modification commenced before 4 January 1983, the Permittee shall conduct monitoring as specified below:
- The refinery operator shall perform component monitoring using the method referenced in Section 5 of this regulation as follows:
 - Monitor with a portable VOC detection device, one (1) time per year (annually): pump seals.
 - Monitor with a portable VOC detection device, four (4) times per year (quarterly): compressor seals.
 - Monitor visually fifty-two (52) times per year (weekly): pump seals.
 - If liquids are observed dripping from a pump seal, the seal shall be checked immediately with a portable detector to determine if a leak of VOCs is present.
 - When a leak is located, a weatherproof and readily visible tag bearing an identification number and the date the leak is located shall be affixed to the leaking component. When the leak is repaired, the tag shall be discarded.

5. **Specific Recordkeeping Requirements:**

- A. Pursuant to Regulation 401 KAR 61:137, Section 4, for any pumps, compressors and sampling stations not in organic HAP service, nor designated in organic HAP service, for which construction or modification commenced before 4 January 1983, the following information shall be recorded and shall be kept for 5 years in a readily accessible location:
- The location, tag number, date and stream composition of the leak.
 - When the leak is repaired, the date of repair and date and instrument reading of component recheck after maintenance.

6. **Specific Reporting Requirements:**

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

- A. Pursuant to Regulation 401 KAR 61:137, Section 4(6), for any pumps, compressors and sampling stations not in organic HAP service, nor designated in organic HAP service, for which construction or modification commenced before 4 January 1983, the Permittee shall conduct reporting as follows: After quarterly monitoring has been performed, the refinery operator shall submit a report to the cabinet listing all leaks that were located but not repaired within the fifteen (15) day limit and a signed statement attesting to the fact that all monitoring has been performed as stipulated in the control plan. If the cabinet requests it, the Permittee shall demonstrate to the cabinet's satisfaction why the repairs could not be completed within the initial fifteen (15) day period. If the leak is unable to be brought into compliance, a variance shall be requested and obtained on an individual basis. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.
- B. The Permittee shall submit notification of the changes to the equipment in VOC service in the No. 2 Crude Unit. This notification shall indicate the actual number of components added and removed for each component type.
- C. This notification of the changes to the equipment in VOC service in the No. 2 Crude Unit shall be submitted within 30 days after the completion of said changes, or by the date of startup of the new FCCU (Unit No. 2-109), whichever is earlier. For the purposes of this permit condition, "date of startup" is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

7. Specific Control Equipment Operating Conditions: n/a

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

NO. 3 CRUDE UNIT

DESCRIPTION

The No. 3 Crude Unit (No. 2-23) is an atmospheric distillation process (constructed 1972) used to distill crude oil and petroleum intermediates into petroleum products and higher-value petroleum intermediates such as atmospheric gas oil. This unit, as modified (modification commenced 2002), will have a nominal capacity of 145,000 BPD.

The emissions from this unit are fugitive emissions from equipment leaks.

APPLICABLE REGULATIONS

The following regulations are applicable to this process unit.

401 KAR 59:046 – Selected New Petroleum Refining Processes and Equipment

401 KAR 63:002 – (40 CFR 63 Subpart CC) National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

40 CFR 63 Subpart CC provides two compliance options for affected process units: 40 CFR 60 Subpart VV and 40 CFR 63 Subpart H. Equipment in the No. 3 Crude Unit (No. 2-23) will be subject to the 40 CFR Part 63 Subpart H compliance option (as referenced by 40 CFR 63.648(c)). The specific requirements of 40 CFR 63 Subpart H are presented below, in the section entitled “40 CFR Part 63 Subpart H LDAR Conditions.” Compliance with the 40 CFR 63 Subpart H compliance option shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

For purposes of 40 CFR 63 Subpart CC, a list shall be maintained of all affected process vents, as defined in 40 CFR 63.641, and their associated control devices. Certain relief valves are not process vents because (1) their operation is critical to the safe operation of the process units and (2) their emissions occur only intermittently. The process vents are exempt from any of the emission standards of 40 CFR 63 Subpart CC because they are vented to one of the control options under this subpart. Further, the emissions from process vents are not considered fuel gas and therefore are not subject to the provisions of 40 CFR 60 Subpart J. The control devices shall be maintained and operated in accordance with the provisions of 40 CFR 63 Subpart CC. Upset and blanket gases are routed to the flare system, which is compliant with the 40 CFR 63 Subpart CC provisions.

Pursuant to 40 CFR 63.640(p), equipment leaks that are also subject to the provisions of 40 CFR parts 60 and 61 are required to comply only with the provisions specified in 40 CFR 63 Subpart CC. Compliance with the standards and requirements of 40 CFR 60.482-10, as referenced by 40 CFR 63.648(a), and 40 CFR 63.644, 63.645, and 63.654, for the closed-vent and flare system is accepted

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

as demonstrating compliance with the standards and requirements in 40 CFR 63.114, 63.118, 63.152, 63.172, and 63.181(g).

For purposes of 40 CFR 63.648(a)(2), calculation of leaking components is performed on a process unit basis.

Pursuant to 40 CFR 63.642(k)(2), the Permittee is not required to calculate the annual emission rate specified in 40 CFR 63.642(g).

1. Operating Limitations:

- A. Pursuant to Regulation 40 CFR 63.138(k), for each residual removed from a Group 1 wastewater stream, as defined in 40 CFR 63.161, the Permittee shall control for air emissions by complying with 40 CFR 63.133 through 63.137 and by complying with one of the provisions below:
- Recycle the residual to a production process or sell the residual for the purpose of recycling. Once a residual is returned to a production process, the residual is no longer subject to this section.
 - Return the residual to the treatment process.
 - Treat the residual to destroy the total combined mass flow rate of Table 8 and/or Table 9 compounds by 99 percent or more, as determined by the procedures specified in 40 CFR 63.145(c) or (d).
 - Comply with the requirements for RCRA treatment options specified in 40 CFR 63.138(h).
- B. This permit authorizes changes to the equipment in VOC service in the No. 3 Crude Unit. The authorized installation of new equipment in VOC service and required removal of equipment in VOC service are as follows:

Component Type	# added	# removed	net change
Compressors	3	0	3
light liquid valves	124	24	100
heavy liquid valves	393	741	-348
gas/vapor valves	241	45	196
light liquid pumps	4	2	2
heavy liquid pumps	4	4	0
pressure relief valves	7	1	6
Connectors	3684	3344	340

2. Emission Limitations: n/a

3. Testing Requirements: n/a

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

4. **Specific Monitoring Requirements:** n/a

5. **Specific Recordkeeping Requirements:** n/a

6. **Specific Reporting Requirements:**

- A. The Permittee shall submit notification of the changes to the equipment in VOC service in the No. 3 Crude Unit. This notification shall indicate the actual number of components added and removed for each component type.
- B. This notification of the changes to the equipment in VOC service in the No. 3 Crude Unit shall be submitted within 30 days after the completion of said changes, or by the date of startup of the new FCCU (Unit No. 2-109), whichever is earlier. For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

7. **Specific Control Equipment Operating Conditions:** n/a

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

NO. 4 VACUUM UNIT

DESCRIPTION

The No. 4 Vacuum Unit (No. 2-26, constructed 1972) is a vacuum distillation process used to distill reduced crude and other petroleum intermediates into petroleum products and higher-value petroleum intermediates such as vacuum gas oil. This unit, as modified (modification commenced 2002), will have a nominal capacity of 75,000 BPD.

The emissions from this unit are fugitive emissions from equipment leaks.

APPLICABLE REGULATIONS

The following regulations are applicable to this process unit.

401 KAR 59:046 – Selected New Petroleum Refining Processes and Equipment

401 KAR 63:002 – (40 CFR 63 Subpart CC) National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

40 CFR 63 Subpart CC provides two compliance options for affected process units: 40 CFR 60 Subpart VV and 40 CFR 63 Subpart H. Equipment in the No. 4 Vacuum Unit (No. 2-26) will be subject to the 40 CFR Part 63 Subpart H compliance option (as referenced by 40 CFR 63.648(c)). The specific requirements of 40 CFR 63 Subpart H are presented below, in the section entitled “40 CFR Part 63 Subpart H LDAR Conditions.” Compliance with the 40 CFR 63 Subpart H compliance option shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

For purposes of 40 CFR 63 Subpart CC, a list shall be maintained of all affected process vents, as defined in 40 CFR 63.641, and their associated control devices. Certain relief valves are not process vents because (1) their operation is critical to the safe operation of the process units and (2) their emissions occur only intermittently. The process vents are exempt from any of the emission standards of 40 CFR 63 Subpart CC because they are vented to one of the control options under this subpart. Further, the emissions from process vents are not considered fuel gas and therefore are not subject to the provisions of 40 CFR 60 Subpart J. The control devices shall be maintained and operated in accordance with the provisions of 40 CFR 63 Subpart CC. Upset and blanket gases are routed to the flare system, which is compliant with the 40 CFR 63 Subpart CC provisions.

Pursuant to 40 CFR 63.640(p), equipment leaks that are also subject to the provisions of 40 CFR parts 60 and 61 are required to comply only with the provisions specified in 40 CFR 63 Subpart CC. Compliance with the standards and requirements of 40 CFR 60.482-10, as referenced by 40 CFR 63.648(a), and 40 CFR 63.644, 63.645, and 63.654, for the closed-vent and flare system is accepted

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

as demonstrating compliance with the standards and requirements in 40 CFR 63.114, 63.118, 63.152, 63.172, and 63.181(g).

For purposes of 40 CFR 63.648(a)(2), calculation of leaking components is performed on a process unit basis.

Pursuant to 40 CFR 63.642(k)(2), the Permittee is not required to calculate the annual emission rate specified in 40 CFR 63.642(g).

1. Operating Limitations:

- A. Pursuant to Regulation 40 CFR 63.138(k), for each residual removed from a Group 1 wastewater stream, as defined in 40 CFR 63.161, the Permittee shall control for air emissions by complying with 40 CFR 63.133 through 63.137 and by complying with one of the provisions below:
- Recycle the residual to a production process or sell the residual for the purpose of recycling. Once a residual is returned to a production process, the residual is no longer subject to this section.
 - Return the residual to the treatment process.
 - Treat the residual to destroy the total combined mass flow rate of Table 8 and/or Table 9 compounds by 99 percent or more, as determined by the procedures specified in 40 CFR 63.145(c) or (d).
 - Comply with the requirements for RCRA treatment options specified in 40 CFR 63.138(h).
- B. This permit authorizes changes to the equipment in VOC service in the No. 4 Vacuum Unit. The authorized installation of new equipment in VOC service and required removal of equipment in VOC service are as follows:

Component Type	# added	# removed	net change
heavy liquid valves	336	137	199
gas/vapor valves	20	0	20
heavy liquid pumps	4	2	2
pressure relief valves	1	0	1
Connectors	1304	548	756

2. **Emission Limitations:** n/a

3. **Testing Requirements:** n/a

4. **Specific Monitoring Requirements:** n/a

5. **Specific Recordkeeping Requirements:** n/a

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

6. Specific Reporting Requirements:

- A. The Permittee shall submit notification of the changes to the equipment in VOC service in the No. 4 Vacuum Unit. This notification shall indicate the actual number of components added and removed for each component type.
- B. This notification of the changes to the equipment in VOC service in the No. 4 Vacuum Unit shall be submitted within 30 days after the completion of said changes, or by the date of startup of the new FCCU (Unit No. 2-109), whichever is earlier. For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

7. Specific Control Equipment Operating Conditions: n/a

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

LOW-PRESSURE VACUUM GAS OIL HYDROTREATER

DESCRIPTION

“Hydrotreating” is a catalytic process that removes sulfur and other impurities from petroleum intermediates.

The Low-Pressure Vacuum Gas Oil (LPVGO) Hydrotreater (Unit No. 2-103, constructed 1975) uses gas oil and hydrogen as its primary raw materials and produces hydrotreated gas oil as its primary product. (This unit is currently in service at the refinery as a kerosene desulfurizer. It is being modified for gas oil hydrotreating service.) The LPVGO Hydrotreater, as modified (modification commenced 2002), will have a nominal gas oil hydrotreating capacity of 40,000 BPD.

Hydrogen sulfide-rich gas is produced as a byproduct of the hydrotreating process.

The emissions from this unit are fugitive emissions from equipment leaks.

APPLICABLE REGULATIONS

The following regulations are applicable to this process unit.

401 KAR 59:046 – Selected New Petroleum Refining Processes and Equipment

401 KAR 63:002 – (40 CFR 63 Subpart CC) National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

40 CFR 63 Subpart CC provides two compliance options for affected process units: 40 CFR 60 Subpart VV and 40 CFR 63 Subpart H. Equipment in the LPVGO Hydrotreater (Unit No. 2-103) will be subject to the 40 CFR Part 63 Subpart H compliance option (as referenced by 40 CFR 63.648(c)). The specific requirements of 40 CFR 63 Subpart H are presented below, in the section entitled “40 CFR Part 63 Subpart H LDAR Conditions.” Compliance with the 40 CFR 63 Subpart H compliance option shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

For purposes of 40 CFR 63 Subpart CC, a list shall be maintained of all affected process vents, as defined in 40 CFR 63.641, and their associated control devices. Certain relief valves are not process vents because (1) their operation is critical to the safe operation of the process units and (2) their emissions occur only intermittently. The process vents are exempt from any of the emission standards of 40 CFR 63 Subpart CC because they are vented to one of the control options under this subpart. Further, the emissions from process vents are not considered fuel gas and therefore are not subject to the provisions of 40 CFR 60 Subpart J. The control devices shall be maintained and operated in accordance with the provisions of 40 CFR 63 Subpart CC. Upset and blanket gases are

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

routed to the flare system, which is compliant with the 40 CFR 63 Subpart CC provisions.

Pursuant to 40 CFR 63.640(p), equipment leaks that are also subject to the provisions of 40 CFR parts 60 and 61 are required to comply only with the provisions specified in 40 CFR 63 Subpart CC.

Compliance with the standards and requirements of 40 CFR 60.482-10, as referenced by 40 CFR 63.648(a), and 40 CFR 63.644, 63.645, and 63.654, for the closed-vent and flare system is accepted as demonstrating compliance with the standards and requirements in 40 CFR 63.114, 63.118, 63.152, 63.172, and 63.181(g).

For purposes of 40 CFR 63.648(a)(2), calculation of leaking components is performed on a process unit basis.

Pursuant to 40 CFR 63.642(k)(2), the Permittee is not required to calculate the annual emission rate specified in 40 CFR 63.642(g).

1. Operating Limitations:

- A. Pursuant to Regulation 40 CFR 63.138(k), for each residual removed from a Group 1 wastewater stream, as defined in 40 CFR 63.161, the Permittee shall control for air emissions by complying with 40 CFR 63.133 through 63.137 and by complying with one of the provisions below:
 - i. Recycle the residual to a production process or sell the residual for the purpose of recycling. Once a residual is returned to a production process, the residual is no longer subject to this section.
 - ii. Return the residual to the treatment process.
 - iii. Treat the residual to destroy the total combined mass flow rate of Table 8 and/or Table 9 compounds by 99 percent or more, as determined by the procedures specified in 40 CFR 63.145(c) or (d).
 - iv. Comply with the requirements for RCRA treatment options specified in 40 CFR 63.138(h).
- B. This permit authorizes changes to the equipment in VOC service in the LPVGO Hydrotreater. The authorized installation of new equipment in VOC service and required removal of equipment in VOC service are as follows:

Component Type	# added	# removed	net change
light liquid valves	138	8	130
heavy liquid valves	149	140	9
gas/vapor valves	108	9	99
>50% H ₂ valves	73	0	73
light liquid pumps	2	0	2
heavy liquid pumps	0	2	-2
sampling station	5	0	5
pressure relief valves	5	8	-3
connectors	452	16	436

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- C. This permit does not authorize the regeneration of spent hydrotreating catalyst.
 - D. Pursuant to Regulation 401 KAR 63:010, Section 3(1), when any hydrotreating catalyst is removed from a reactor vessel, the Permittee shall take reasonable precautions to prevent particulate matter from becoming airborne.
2. **Emission Limitations:**
- A. Pursuant to Regulation 401 KAR 63:010, Section 3(2), when any hydrotreating catalyst is removed from a reactor vessel, the Permittee shall not cause or permit the discharge of visible fugitive dust emissions beyond the lot line of the property.
3. **Testing Requirements:** n/a
4. **Specific Monitoring Requirements:** n/a
5. **Specific Recordkeeping Requirements:** n/a
6. **Specific Reporting Requirements:**
- A. The Permittee shall submit notification of the changes to the equipment in VOC service in the LPVGO Hydrotreater. This notification shall indicate the actual number of components added and removed for each component type.
 - B. This notification of the changes to the equipment in VOC service in the LPVGO Hydrotreater shall be submitted within 30 days after the completion of said changes, or by the date of startup of the new FCCU (Unit No. 2-109), whichever is earlier. For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.
7. **Specific Control Equipment Operating Conditions:** n/a

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

HIGH-PRESSURE VACUUM GAS OIL HYDROTREATER

DESCRIPTION

“Hydrotreating” is a catalytic process that removes sulfur and other impurities from petroleum intermediates.

The High-Pressure Vacuum Gas Oil (HPVGO) Hydrotreater (Unit No. 2-104, constructed 1976) uses gas oil and hydrogen as its primary raw materials and produces hydrotreated gas oil as its primary product. This unit, as modified (modification commenced 2002), will have a nominal hydrotreating capacity of 60,000 BPD.

Hydrogen sulfide-rich gas is produced as a byproduct of the hydrotreating process.

The emissions from this unit are fugitive emissions from equipment leaks.

APPLICABLE REGULATIONS

The following regulations are applicable to this process unit.

401 KAR 59:046 – Selected New Petroleum Refining Processes and Equipment

401 KAR 63:002 – (40 CFR 63 Subpart CC) National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

40 CFR 63 Subpart CC provides two compliance options for affected process units: 40 CFR 60 Subpart VV and 40 CFR 63 Subpart H. Equipment in the HPVGO Hydrotreater (Unit No. 2-104) will be subject to the 40 CFR Part 63 Subpart H compliance option (as referenced by 40 CFR 63.648(c)). The specific requirements of 40 CFR 63 Subpart H are presented below, in the section entitled “40 CFR Part 63 Subpart H LDAR Conditions.” Compliance with the 40 CFR 63 Subpart H compliance option shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

For purposes of 40 CFR 63 Subpart CC, a list shall be maintained of all affected process vents, as defined in 40 CFR 63.641, and their associated control devices. Certain relief valves are not process vents because (1) their operation is critical to the safe operation of the process units and (2) their emissions occur only intermittently. The process vents are exempt from any of the emission standards of 40 CFR 63 Subpart CC because they are vented to one of the control options under this subpart. Further, the emissions from process vents are not considered fuel gas and therefore are not subject to the provisions of 40 CFR 60 Subpart J. The control devices shall be maintained and operated in accordance with the provisions of 40 CFR 63 Subpart CC. Upset and blanket gases are routed to the flare system, which is compliant with the 40 CFR 63 Subpart CC provisions.

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Pursuant to 40 CFR 63.640(p), equipment leaks that are also subject to the provisions of 40 CFR parts 60 and 61 are required to comply only with the provisions specified in 40 CFR 63 Subpart CC.

Compliance with the standards and requirements of 40 CFR 60.482-10, as referenced by 40 CFR 63.648(a), and 40 CFR 63.644, 63.645, and 63.654, for the closed-vent and flare system is accepted as demonstrating compliance with the standards and requirements in 40 CFR 63.114, 63.118, 63.152, 63.172, and 63.181(g).

For purposes of 40 CFR 63.648(a)(2), calculation of leaking components is performed on a process unit basis.

Pursuant to 40 CFR 63.642(k)(2), the Permittee is not required to calculate the annual emission rate specified in 40 CFR 63.642(g).

1. Operating Limitations:

- A. Pursuant to Regulation 40 CFR 63.138(k), for each residual removed from a Group 1 wastewater stream, as defined in 40 CFR 63.161, the Permittee shall control for air emissions by complying with 40 CFR 63.133 through 63.137 and by complying with one of the provisions below:
 - i. Recycle the residual to a production process or sell the residual for the purpose of recycling. Once a residual is returned to a production process, the residual is no longer subject to this section.
 - ii. Return the residual to the treatment process.
 - iii. Treat the residual to destroy the total combined mass flow rate of Table 8 and/or Table 9 compounds by 99 percent or more, as determined by the procedures specified in 40 CFR 63.145(c) or (d).
 - iv. Comply with the requirements for RCRA treatment options specified in 40 CFR 63.138(h).
- B. This permit authorizes changes to the equipment in VOC service in the HPVGO Hydrotreater. The authorized installation of new equipment in VOC service and required removal of equipment in VOC service are as follows:

Component Type	# added	# removed	net change
light liquid valves	112	63	49
heavy liquid valves	430	260	170
gas/vapor valves	343	5	338
>50% H ₂ valves	858	1	857
light liquid pumps	0	0	0
heavy liquid pumps	12	0	12
sampling station	6	0	6
pressure relief valves	37	1	36
>50% H ₂ compressors	2	0	2
connectors	1,806	45	1,761

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

- C. This permit does not authorize the regeneration of spent hydrotreating catalyst.
 - D. Pursuant to Regulation 401 KAR 63:010, Section 3(1), when any hydrotreating catalyst is removed from a reactor vessel, the Permittee shall take reasonable precautions to prevent particulate matter from becoming airborne.
2. **Emission Limitations:**
- A. Pursuant to Regulation 401 KAR 63:010, Section 3(2), when any hydrotreating catalyst is removed from a reactor vessel, the Permittee shall not cause or permit the discharge of visible fugitive dust emissions beyond the lot line of the property.
3. **Testing Requirements:** n/a
4. **Specific Monitoring Requirements:** n/a
5. **Specific Recordkeeping Requirements:**
- A. The Permittee shall submit notification of the changes to the equipment in VOC service in the HPVGO Hydrotreater. This notification shall indicate the actual number of components added and removed for each component type.
 - B. This notification of the changes to the equipment in VOC service in the HPVGO Hydrotreater shall be submitted within 30 days after the completion of said changes, or by the date of startup of the new FCCU (Unit No. 2-109), whichever is earlier. For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.
6. **Specific Reporting Requirements:** n/a
7. **Specific Control Equipment Operating Conditions:** n/a

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

DISTILLATE DESULFURIZER

DESCRIPTION

The Distillate Desulfurizer (Unit No. 2-121) uses a hydrotreating process to achieve desulfurization. “Hydrotreating” is a catalytic process that removes sulfur and other impurities from petroleum intermediates.

The Distillate Desulfurizer uses distillate intermediates and hydrogen as its primary raw materials and produces hydrotreated distillate as its primary product. This unit, as modified (modification commenced 2002), will have a nominal hydrotreating capacity of 75,000 BPD.

Hydrogen sulfide-rich gas is produced as a byproduct of the hydrotreating process.

The emissions from this unit are fugitive emissions from equipment leaks.

APPLICABLE REGULATIONS

The following regulations are applicable to this process unit.

401 KAR 59:046 – Selected New Petroleum Refining Processes and Equipment

401 KAR 63:002 – (40 CFR 63 Subpart CC) National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

40 CFR 63 Subpart CC provides two compliance options for affected process units: 40 CFR 60 Subpart VV and 40 CFR 63 Subpart H. Equipment in the Distillate Desulfurizer (Unit No. 2-121) will be subject to the 40 CFR Part 63 Subpart H compliance option (as referenced by 40 CFR 63.648(c)). The specific requirements of 40 CFR 63 Subpart H are presented below, in the section entitled “40 CFR Part 63 Subpart H LDAR Conditions.” Compliance with the 40 CFR 63 Subpart H compliance option shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

For purposes of 40 CFR 63 Subpart CC, a list shall be maintained of all affected process vents, as defined in 40 CFR 63.641, and their associated control devices. Certain relief valves are not process vents because (1) their operation is critical to the safe operation of the process units and (2) their emissions occur only intermittently. The process vents are exempt from any of the emission standards of 40 CFR 63 Subpart CC because they are vented to one of the control options under this subpart. Further, the emissions from process vents are not considered fuel gas and therefore are not subject to the provisions of 40 CFR 60 Subpart J. The control devices shall be maintained and operated in accordance with the provisions of 40 CFR 63 Subpart CC. Upset and blanket gases are routed to the flare system, which is compliant with the 40 CFR 63 Subpart CC provisions.

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Pursuant to 40 CFR 63.640(p), equipment leaks that are also subject to the provisions of 40 CFR parts 60 and 61 are required to comply only with the provisions specified in 40 CFR 63 Subpart CC.

Compliance with the standards and requirements of 40 CFR 60.482-10, as referenced by 40 CFR 63.648(a), and 40 CFR 63.644, 63.645, and 63.654, for the closed-vent and flare system is accepted as demonstrating compliance with the standards and requirements in 40 CFR 63.114, 63.118, 63.152, 63.172, and 63.181(g).

For purposes of 40 CFR 63.648(a)(2), calculation of leaking components is performed on a process unit basis.

Pursuant to 40 CFR 63.642(k)(2), the Permittee is not required to calculate the annual emission rate specified in 40 CFR 63.642(g).

1. Operating Limitations:

A. Pursuant to Regulation 40 CFR 63.138(k), for each residual removed from a Group 1 wastewater stream, as defined in 40 CFR 63.161, the Permittee shall control for air emissions by complying with 40 CFR 63.133 through 63.137 and by complying with one of the provisions below:

- i. Recycle the residual to a production process or sell the residual for the purpose of recycling. Once a residual is returned to a production process, the residual is no longer subject to this section.
- ii. Return the residual to the treatment process.
- iii. Treat the residual to destroy the total combined mass flow rate of Table 8 and/or Table 9 compounds by 99 percent or more, as determined by the procedures specified in 40 CFR 63.145(c) or (d).
- iv. Comply with the requirements for RCRA treatment options specified in 40 CFR 63.138(h).

B. This permit authorizes changes to the equipment in VOC service in the Distillate Desulfurizer. The authorized installation of new equipment in VOC service and required removal of equipment in VOC service are as follows:

Component Type	# added	# removed	net change
heavy liquid valves	145	7	138
gas/vapor valves	72	8	64
>50% H ₂ valves	13	0	13
heavy liquid pumps	2	0	2
pressure relief valves	4	0	4
connectors	245	7	238

C. This permit does not authorize the regeneration of spent hydrotreating catalyst.

D. Pursuant to Regulation 401 KAR 63:010, Section 3(1), when any hydrotreating catalyst is removed from a reactor vessel, the Permittee shall take reasonable precautions to

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

prevent particulate matter from becoming airborne.

2. Emission Limitations:

- A. Pursuant to Regulation 401 KAR 63:010, Section 3(2), when any hydrotreating catalyst is removed from a reactor vessel, the Permittee shall not cause or permit the discharge of visible fugitive dust emissions beyond the lot line of the property.

3. Testing Requirements: n/a

4. Specific Monitoring Requirements: n/a

5. Specific Recordkeeping Requirements: n/a

6. Specific Reporting Requirements:

- A. The Permittee shall submit notification of the changes to the equipment in VOC service in the Distillate Desulfurizer. This notification shall indicate the actual number of components added and removed for each component type.
- B. This notification of the changes to the equipment in VOC service in the Distillate Desulfurizer shall be submitted within 30 days after the completion of said changes, or by the date of startup of the new FCCU (Unit No. 2-109), whichever is earlier. For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

7. Specific Control Equipment Operating Conditions: n/a

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

NEW FLUIDIZED CATALYTIC CRACKING UNIT (FCCU)**DESCRIPTION**

The existing Residual Catalytic Cracking (RCC) Unit (No. 2-109)¹ will be expanded and converted to a conventional Fluidized Catalytic Cracking Unit (FCCU). This unit will use hydrotreated gas oil as its primary raw material and will produce fuel gas, mixed C3/C4 hydrocarbons, gasoline, light and heavy cycle oil, slurry, and coke as its products. As modified, the nominal fresh feed charge capacity of this unit is 95,000 BPD.

The FCCU includes three main components: reactor, fractionator, and catalyst regenerator. Fresh feed, comprising primarily hydrotreated gas oil, along with catalyst, in the form of very fine particles, are charged to the reactor vessel at high temperature. Cracking reactions (i.e., the breaking of large molecules into smaller molecules) occur in the reactor vessel. The catalyst is separated from the reaction products primarily through inertial separation. Reaction products are conveyed to a “fractionator” for separation. The catalyst is conveyed to the catalyst regenerator, where carbonaceous material (“coke”) is burned off in a controlled combustion process, and continuously recirculated to the reactor.

Exhaust gases from the catalyst regenerator are vented to the existing Heat Recovery Units (ID Nos. 2-116-B-1 and 2-116-B-2) for heat recovery. These units are fuel gas combustion devices that are covered in the “Combustion Devices” section of this permit.

The existing RCC Unit and Heat Recovery Units were constructed in 1980. Modification will commence in 2002.

The emissions from the FCCU include fugitive emissions from equipment leaks and emissions of combustion products from the catalyst regenerator.

APPLICABLE REGULATIONS

The following regulations are applicable to this process unit.

- 401 KAR 59:046 – Selected New Petroleum Refining Processes and Equipment
- 401 KAR 60:005 – (40 CFR 60 Subpart J) Standards of Performance for Petroleum Refineries
- 401 KAR 63:010 – Fugitive Emissions
- 401 KAR 63:002 – (40 CFR 63 Subpart CC) National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

40 CFR 63 Subpart CC provides two compliance options for affected process units for equipment

¹ The RCC Unit at Catlettsburg Refining has also been referred to as the Residual Crude Conversion Unit.

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

leaks: 40 CFR 60 Subpart VV and 40 CFR 63 Subpart H. Equipment in the FCCU (Unit No. 2-109) will be subject to the 40 CFR Part 63 Subpart H compliance option (as referenced by 40 CFR 63.648(c)). The specific requirements of 40 CFR 63 Subpart H are presented below, in the section entitled “40 CFR Part 63 Subpart H LDAR Conditions.” Compliance with the 40 CFR 63 Subpart H compliance option shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

For purposes of 40 CFR 63 Subpart CC, a list shall be maintained of all affected process vents, as defined in 40 CFR 63.641, and their associated control devices. Certain relief valves are not process vents because (1) their operation is critical to the safe operation of the process units and (2) their emissions occur only intermittently. The process vents are exempt from any of the emission standards of 40 CFR 63 Subpart CC because they are vented to one of the control options under this subpart. Further, the emissions from process vents are not considered fuel gas and therefore are not subject to the provisions of 40 CFR 60 Subpart J. The control devices shall be maintained and operated in accordance with the provisions of 40 CFR 63 Subpart CC. Upset and blanket gases are routed to the flare system, which is compliant with the 40 CFR 63 Subpart CC provisions.

Pursuant to 40 CFR 63.640(p), equipment leaks that are also subject to the provisions of 40 CFR parts 60 and 61 are required to comply only with the provisions specified in 40 CFR 63 Subpart CC. Compliance with the standards and requirements of 40 CFR 60.482-10, as referenced by 40 CFR 63.648(a), and 40 CFR 63.644, 63.645, and 63.654, for the closed-vent and flare system is accepted as demonstrating compliance with the standards and requirements in 40 CFR 63.114, 63.118, 63.152, 63.172, and 63.181(g).

For purposes of 40 CFR 63.648(a)(2), calculation of leaking components is performed on a process unit basis.

Pursuant to 40 CFR 63.642(k)(2), the Permittee is not required to calculate the annual emission rate specified in 40 CFR 63.642(g).

1. Operating Limitations:

- A. Pursuant to 401 KAR 50:055, should a malfunction occur, the FCCU regenerator vent valves may be opened only for the minimum length of time necessary to correct the malfunction in the most expeditious manner possible.
- B. Pursuant to 401 KAR 50:055, the FCCU emergency regenerator vent valves may be stroked for a period of time not to exceed 6 minutes during any calendar day. Opacity of visible emissions from the emergency regenerator vent valve during stroking shall not equal or exceed 40 percent as determined by opacity CEM or U.S. EPA Reference Method 9.
- C. Pursuant to 401 KAR 50:055, the FCCU emergency regenerator vent valves may be

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

opened during maintenance and/or an annual safety inspection of air pollution control equipment only if:

- i. The requirements regarding planned shut-downs contained in 401 KAR 50:055 Section 1(2) are followed, and
 - ii. The vent valves are opened for the minimum length of time necessary to perform the required function.
- D. Pursuant to 401 KAR 50:055, during all start-ups of the FCCU, the following conditions apply:
- i. During the initial heating phase the vent valves may be opened provided the opacity does not equal or exceed twenty (20) percent as measured by EPA Method 9.
 - ii. Upon the initial introduction of catalyst into the FCCU, the emergency regenerator vent valve shall be closed.
- E. Pursuant to 401 KAR 50:055, during all shutdown procedures the Permittee shall use all reasonable measures to minimize emissions.
- F. Pursuant to Regulation 40 CFR 63.138(k), for each residual removed from a Group 1 wastewater stream, as defined in 40 CFR 63.161, the Permittee shall control for air emissions by complying with 40 CFR 63.133 through 63.137 and by complying with one of the provisions below:
- i. Recycle the residual to a production process or sell the residual for the purpose of recycling. Once a residual is returned to a production process, the residual is no longer subject to this section.
 - ii. Return the residual to the treatment process.
 - iii. Treat the residual to destroy the total combined mass flow rate of Table 8 and/or Table 9 compounds by 99 percent or more, as determined by the procedures specified in 40 CFR 63.145(c) or (d).
 - iv. Comply with the requirements for RCRA treatment options specified in 40 CFR 63.138(h).
- G. This permit authorizes changes to the equipment in VOC service in the FCCU (Unit No. 2-109). The authorized installation of new equipment in VOC service and required removal of equipment in VOC service are as follows:

Component Type	# added	# removed	net change
light liquid valves	69	12	57
heavy liquid valves	318	62	256
gas/vapor valves	67	0	67
light liquid pumps	2	0	2
heavy liquid pumps	5	2	3
pressure relief valves	6	0	6
Connectors	1551	296	1255

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)****2. Emission Limitations:**

- A. Pursuant to 40 CFR 60 Subpart J, 60.102(a)(1) (401 KAR 60:100), emissions of particulate matter into the atmosphere from the FCCU catalyst regenerator shall not exceed 1.0 lb per 1,000 lbs of coke burn-off in the FCCU catalyst regenerator.

Compliance Demonstration Method: Initial performance test performed using EPA Reference Method 5B and in accordance with 40 CFR 60.8. Compliance with the 40 CFR 60 Subpart J emissions standard shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

- B. Pursuant to 40 CFR 60 Subpart J, 60.102(a)(2) (401 KAR 60:100), emissions into the atmosphere from the FCCU catalyst regenerator shall not exceed 30 percent opacity, based on a six-minute average, except that one six-minute period in excess of 30 percent opacity is allowed during each one-hour period.

Compliance Demonstration Method: A continuous opacity monitoring system (COMS) shall be calibrated, maintained and operated to demonstrate compliance with the opacity limitation. Compliance with the 40 CFR 60 Subpart J emissions standard shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

- C. Pursuant to 40 CFR 60 Subpart J, 60.103(a) (401 KAR 60:100), the concentration of carbon monoxide in the exhaust from the FCCU catalyst regenerator shall not exceed 500 ppmv (0.050 percent by vol.) on a dry basis, on a one-hour average.

Compliance Demonstration Method: A carbon monoxide CEMS shall be calibrated, maintained and operated to demonstrate compliance with the carbon monoxide concentration limit. Compliance with the 40 CFR 60 Subpart J emissions standard shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

- D. Pursuant to 40 CFR 60 Subpart J, 60.104(b) (401 KAR 60:100), emissions into the atmosphere from the FCCU catalyst regenerator shall be restricted in accordance with one of the following.

- (1) Without the use of an add-on control device, maintain sulfur oxides emissions calculated as sulfur dioxide to the atmosphere less than or equal to 9.8 kg/Mg (20 lb/ton) coke burn-off; or
- (2) Process in the fluid catalytic cracking unit fresh feed that has a total sulfur content no greater than 0.30 percent by weight; or

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- (3) With an add-on control device, reduce sulfur dioxide emissions to the atmosphere by 90 percent or maintain sulfur dioxide emissions to the atmosphere less than or equal to 50 ppm by volume (vppm), whichever is less stringent.

Compliance Demonstration Method: A sulfur dioxide CEMS shall be calibrated, maintained and operated to demonstrate compliance with the sulfur dioxide concentration limit. Compliance with the 40 CFR 60 Subpart J emissions standard shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, "date of startup" is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

- E. Pursuant to 401 KAR 59:010, Section 3(1)(a), visible emissions shall not equal or exceed 20% opacity on a six (6) minute average basis as measured by EPA Method 9 as incorporated by reference in 401 KAR 50:015 or by the continuous emissions monitoring system, except as follows:
- i. Pursuant to Regulation 401 KAR 50:055, Section 2(4), the opacity standard does not apply during periods of startup and shutdown; and
 - ii. Pursuant to Regulation 401 KAR 50:055, Section 1(1), visible emissions due to shutdown or malfunctions which temporarily exceed the standard shall not be deemed in violation of such standards if the requirements of 401 KAR 50:055, Sections 1(2) and 1(3) are satisfied, and the Director makes the determinations specified in Section 1(4).
- F. The FCCU vent stack shall be equipped with a valve that, in closed position, results in no more than five percent (5%) opacity, six (6) minute average, as determined by EPA Method 9, except as consistent with 401 KAR 50:055 in the event of a malfunction of the FCCU.
- G. The source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification. Relaxation of limitations on the capacity to emit of the equipment which were established to preclude the applicability of regulation 401 KAR 51:017, Prevention of significant deterioration of air quality, or 401 KAR 51:052, Review of new sources in or impacting upon nonattainment areas, is prohibited unless the applicable provisions of these regulations have been satisfied. Alternatively, the Permittee may submit documentation that a proposed activity would not cause the change authorized to become classified as a major modification pursuant to regulations 401 KAR 51:017 or 51:052. The "synthetic minor" emission limitations for the FCCU are as follows:

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Affected Units	maximum emissions (tons/yr)				
	SO ₂	NO _x	VOC	CO	PM ₁₀
(New) FCCU (including Heat Recovery Units North and South)	256.0	365.0	55.0	448.0	265.4

In addition, heat input to each of these heat recovery units shall not exceed 431 MMBtu/hr (HHV) based on a 365-day rolling average.

Compliance Demonstration Method: The Permittee shall calculate for each day, in tons per year, the rolling 365-day emissions of each pollutant. The emissions of SO₂, NO_x, and CO shall be based upon exhaust flow rate and CEMS data. The emissions of VOC and PM₁₀ shall be based upon emission factors from the most recent performance test. Compliance with the synthetic minor emission limitations shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

3. Testing Requirements: n/a

4. Specific Monitoring Requirements:

- A. The Permittee shall monitor opacity via a continuous opacity monitoring system (COMS). The averaging time shall be a rolling six (6) minute average.
- B. The Permittee shall monitor carbon monoxide (CO), sulfur dioxide (SO₂), and nitrogen oxides (NO_x) concentration via CEMS.
- C. The Permittee shall comply with all provisions of 40 CFR 60 Appendix F, Quality Assurance Requirements for Gas Continuous Emission Monitoring Systems Used for Compliance Determination, for the FCCU opacity, CO, SO₂, and NO_x CEMS.
- D. In order to demonstrate compliance with the particulate matter limit, the Permittee shall monitor and record hourly the pressure drop across the FCCU baghouse.

5. Specific Recordkeeping Requirements:

- A. The Permittee shall record for each day, in tons per year, the rolling 365-day emissions of each pollutant. The emissions of SO₂, NO_x, and CO shall be based upon exhaust flow rate and CEMS data. The emissions of VOC and PM₁₀ shall be based upon emission factors from the most recent performance test.
- B. All data necessary to calculate flue gas flow rate, oxygen and moisture content shall be retained for five years and shall be retrievable and made available to Division personnel upon request.

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

6. Specific Reporting Requirements:

- A. The Permittee shall report periods when the pressure drop across the FCCU baghouse is above the proper operating set-point for more than eight (8) hours in any 24 hour period to the Division within 30 days of the end of each semi-annual period.
- B. The Permittee shall submit semiannually a report of the 365-day rolling sum emissions of SO₂, NO_x, CO, VOC, and PM₁₀.
- C. The Permittee shall submit notification of the changes to the equipment in VOC service in the FCCU (Unit No. 2-109). This notification shall indicate the actual number of components added and removed for each component type.
- D. This notification of the changes to the equipment in VOC service in the FCCU (Unit No. 2-109) shall be submitted within 30 days after the completion of said changes, or by the date of startup of the FCCU (Unit No. 2-109), whichever is earlier. For the purposes of this permit condition, "date of startup" is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

7. Specific Control Equipment Operating Conditions: n/a

8. Compliance Schedule:

See Section I - Compliance Schedule

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

GAS CONCENTRATION PLANTS**DESCRIPTION**

The gas concentration plants (Unit Nos. 2-2, 2-110, 2-113, and 2-114) (constructed 1980, modification commenced 2002) separate the liquid and gas products from the FCCU into different petroleum products. Offgas is treated with amine (MDEA) to remove H₂S before the gas is transported to the refinery fuel system. The mixed C3/C4 product stream is treated with caustic and amine (MDEA) to remove H₂S and other sulfur compounds such as mercaptans before the stream is processed in other downstream process units. The gasoline product stream is treated with caustic to remove sulfur compounds before being transported to gasoline blending.

Emissions from the gas concentration plants are fugitive emissions from equipment leaks.

APPLICABLE REGULATIONS

The following regulations are applicable to this process unit.

401 KAR 59:046 – Selected New Petroleum Refining Processes and Equipment
401 KAR 63:002 – (40 CFR 63 Subpart CC) National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

40 CFR 63 Subpart CC provides two compliance options for affected process units for equipment leaks: 40 CFR 60 Subpart VV and 40 CFR 63 Subpart H. Equipment in the Gas Concentration Plants will be subject to the 40 CFR Part 63 Subpart H compliance option (as referenced by 40 CFR 63.648(c)). The specific requirements of 40 CFR 63 Subpart H are presented below, in the section entitled “40 CFR Part 63 Subpart H LDAR Conditions.” Compliance with the 40 CFR 63 Subpart H compliance option shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

For purposes of 40 CFR 63 Subpart CC, a list shall be maintained of all affected process vents, as defined in 40 CFR 63.641, and their associated control devices. Certain relief valves are not process vents because (1) their operation is critical to the safe operation of the process units and (2) their emissions occur only intermittently. The process vents are exempt from any of the emission standards of 40 CFR 63 Subpart CC because they are vented to one of the control options under this subpart. Further, the emissions from process vents are not considered fuel gas and therefore are not subject to the provisions of 40 CFR 60 Subpart J. The control devices shall be maintained and operated in accordance with the provisions of 40 CFR 63 Subpart CC. Upset and blanket gases are routed to the flare system, which is compliant with the 40 CFR 63 Subpart CC provisions.

Pursuant to 40 CFR 63.640(p), equipment leaks that are also subject to the provisions of 40 CFR

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

parts 60 and 61 are required to comply only with the provisions specified in 40 CFR 63 Subpart CC. Compliance with the standards and requirements of 40 CFR 60.482-10, as referenced by 40 CFR 63.648(a), and 40 CFR 63.644, 63.645, and 63.654, for the closed-vent and flare system is accepted as demonstrating compliance with the standards and requirements in 40 CFR 63.114, 63.118, 63.152, 63.172, and 63.181(g).

For purposes of 40 CFR 63.648(a)(2), calculation of leaking components is performed on a process unit basis.

Pursuant to 40 CFR 63.642(k)(2), the Permittee is not required to calculate the annual emission rate specified in 40 CFR 63.642(g).

1. Operating Limitations:

- A. Pursuant to Regulation 40 CFR 63.138(k), for each residual removed from a Group 1 wastewater stream, as defined in 40 CFR 63.161, the Permittee shall control for air emissions by complying with 40 CFR 63.133 through 63.137 and by complying with one of the provisions below:
- Recycle the residual to a production process or sell the residual for the purpose of recycling. Once a residual is returned to a production process, the residual is no longer subject to this section.
 - Return the residual to the treatment process.
 - Treat the residual to destroy the total combined mass flow rate of Table 8 and/or Table 9 compounds by 99 percent or more, as determined by the procedures specified in 40 CFR 63.145(c) or (d).
 - Comply with the requirements for RCRA treatment options specified in 40 CFR 63.138(h).
- B. This permit authorizes changes to the equipment in VOC service in the Gas Concentration Plants. The authorized installation of new equipment in VOC service and required removal of equipment in VOC service are as follows:

Component Type	# added	# removed	net change
Compressors	0	1	-1
light liquid valves	282	884	-602
heavy liquid valves	0	191	-191
gas/vapor valves	119	359	-240
light liquid pumps	6	22	-16
heavy liquid pumps	0	2	-2
pressure relief valves	8	20	-12
Connectors	1601	5736	-4135

2. Emission Limitations: n/a**3. Testing Requirements: n/a**

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

4. **Specific Monitoring Requirements:** n/a

5. **Specific Recordkeeping Requirements:** n/a

6. **Specific Reporting Requirements:**

- A. The Permittee shall submit notification of the changes to the equipment in VOC service in the Gas Concentration Plants. This notification shall indicate the actual number of components added and removed for each component type.
- B. This notification of the changes to the equipment in VOC service in the Gas Concentration Plants shall be submitted within 30 days after the completion of said changes, or by the date of startup of the new FCCU (Unit No. 2-109), whichever is earlier. For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

7. **Specific Control Equipment Operating Conditions:** n/a

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

SULFUR RECOVERY PLANT (SRU #1 AND SRU #2)

DESCRIPTION

The Sulfur Recovery Plant includes two Claus process sulfur recovery units (“SRU,” Unit Nos. 2-106 and 2-119) and two associated Shell Claus Offgas Treatment (“SCOT”) units (Unit Nos. 2-107 and 2-120).

The Sulfur Recovery Plant recovers sulfur from hydrogen sulfide via a vapor-phase catalytic reaction of sulfur dioxide and hydrogen sulfide. The Sulfur Recovery Plant, as modified, will have a sulfur production capacity of 628 long tons per day (LTPD).

Each SRU/SCOT equipment train is equipped with a thermal oxidizer for control of hydrogen sulfide emissions. The thermal oxidizers (Unit Nos. 2-106-B-307 and 2-120-B-2) are fuel gas combustion devices that are covered in the “Combustion Devices” section of this permit.

APPLICABLE REGULATIONS

The following regulations are applicable to this process unit.

- 401 KAR 59:046 – Selected New Petroleum Refining Processes and Equipment
- 401 KAR 60:005 – (40 CFR 60 Subpart J) Standards of Performance for Petroleum Refineries
- 401 KAR 63:002 – (40 CFR 63 Subpart CC) National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

40 CFR 63 Subpart CC provides two compliance options for affected process units: 40 CFR 60 Subpart VV and 40 CFR 63 Subpart H. Equipment in the Sulfur Recovery Plant will be subject to the 40 CFR Part 60 Subpart VV compliance option (as referenced by 40 CFR 63.648(a)). The specific requirements of Subpart VV are presented below, in the section entitled “40 CFR Part 60 Subpart VV LDAR Conditions.”

All petroleum refinery valves associated with this process unit, and determined to be in VOC service, are presumed to be in organic hazardous air pollutant (OHAP) service and therefore subject to 40 CFR Part 60 Subpart VV (40 CFR 63.648(a)(1)). For pumps, compressors, and sample stations the Permittee shall individually determine or designate which are in OHAP service. Those pumps, compressors and sample stations not in OHAP service and for which construction or modification was commenced before 4 January 1983 (40 CFR 60.590(b)) shall be subject to 401 KAR 61:137. For purposes of 40 CFR 63.648(a)(2), calculation of leaking components is performed on a process unit basis. Pursuant to 40 CFR 60.482-1(d), for equipment not in organic HAP service, as defined in 40 CFR 63.161, equipment that is in vacuum service is excluded from the requirements of 40 CFR 60.482-2 to 60.482-10 if it is identified as required in 40 CFR 60.486(e).

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

For purposes of 40 CFR 63 Subpart CC, a list shall be maintained of all affected process vents, as defined in 40 CFR 63.641, and their associated control devices. Certain relief valves are not process vents because (1) their operation is critical to the safe operation of the process units and (2) their emissions occur only intermittently. The process vents are exempt from any of the emission standards of 40 CFR 63 Subpart CC because they are vented to one of the control options under this subpart. Further, the emissions from process vents are not considered fuel gas and therefore are not subject to the provisions of 40 CFR 60 Subpart J. The control devices shall be maintained and operated in accordance with the provisions of 40 CFR 63 Subpart CC. Upset and blanket gases are routed to the flare system, which is compliant with the 40 CFR 63 Subpart CC provisions.

Pursuant to 40 CFR 63.640(p), equipment leaks that are also subject to the provisions of 40 CFR parts 60 and 61 are required to comply only with the provisions specified in 40 CFR 63 Subpart CC. Compliance with the standards and requirements of 40 CFR 60.482-10, as referenced by 40 CFR 63.648(a), and 40 CFR 63.644, 63.645, and 63.654, for the closed-vent and flare system is accepted as demonstrating compliance with the standards and requirements in 40 CFR 63.114, 63.118, 63.152, 63.172, and 63.181(g). Pursuant to 40 CFR 60.486(k), the provisions of 40 CFR 60.7(b) and (d) do not apply to affected facilities subject to 40 CFR 60 Subpart VV.

1. Operating Limitations:

- A. In the event that emissions during unplanned shutdowns, emergency shutdowns, or malfunction of one of the SRUs exceed an applicable standard set forth by the Division, the Permittee shall be deemed in violation of such applicable standards unless the requirements of 401 KAR 50:055 Sections 1(2) and 1(3) and the following requirements are met:
 - i. The Permittee shall route that portion of the feed streams to the operational SRU that is necessary to, as expeditiously as practicable, achieve compliance with all applicable standards set forth by the Division and detailed in this permit.
 - ii. If the procedure outlined in paragraph (1) does not result in compliance with the applicable standards set forth by the Division and detailed in this permit, the Permittee shall reduce crude oil feedrate and/or adjust other operating parameters such that compliance with all applicable standards set forth by the Division and detailed in this permit is achieved as expeditiously as practicable.
- B. In the event that emissions during planned/unplanned shutdowns, emergency shutdowns, or malfunctions, such that both SRUs are simultaneously inoperable or not functioning properly, exceed an applicable standard set forth by the Division and detailed in this permit, the Permittee shall be deemed in violation of such standards unless the requirements of 401 KAR 50:055 Sections 1(2) and 1(3) and the following requirements are met which may be deemed to constitute good air pollution control practices:
 - i. The Permittee shall as soon as practicable take all measures necessary to achieve compliance with all standards as expeditiously as practicable.
 - ii. The measures shall include such of the following that are necessary and which shall be undertaken in the sequence necessary to achieve compliance as

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

expeditiously as practicable:

1. Reduce crude oil feedrate to the refinery;
2. Reduce FCCU feed;
3. Reduce black oil feed at the FCCU;
4. Reduce Naphtha Pretreater feeds;
5. Reduce or remove feed from the high-pressure and low-pressure vacuum gas oil (HPVGO and LPVGO) hydrotreater units and go on circulation;
6. Utilize as sweet a crude as possible with the inventories available;
7. Reduce all other hydrotreating unit feeds.

- C. Pursuant to Regulation 40 CFR 63.138(k), for each residual removed from a Group 1 wastewater stream, as defined in 40 CFR 63.161, the Permittee shall control for air emissions by complying with 40 CFR 63.133 through 63.137 and by complying with one of the provisions below:
- i. Recycle the residual to a production process or sell the residual for the purpose of recycling. Once a residual is returned to a production process, the residual is no longer subject to this section.
 - ii. Return the residual to the treatment process.
 - iii. Treat the residual to destroy the total combined mass flow rate of Table 8 and/or Table 9 compounds by 99 percent or more, as determined by the procedures specified in 40 CFR 63.145(c) or (d).
 - iv. Comply with the requirements for RCRA treatment options specified in 40 CFR 63.138(h).

2. Emission Limitations:

- A. Pursuant to 40 CFR 60 Subpart J, 60.104(a)(2)(i) (401 KAR 60:100), the concentration of sulfur dioxide in the stack gas shall not exceed 250 ppmv (0.025 percent by vol.) at zero percent oxygen on a dry basis, on a rolling twelve (12) hour average.

Compliance Demonstration Method: A sulfur dioxide continuous emission monitoring system (CEMS) shall be calibrated, maintained and operated to demonstrate compliance with the sulfur dioxide concentration limit. Compliance with the 40 CFR 60 Subpart J emission standard shall be achieved no later than the date of completion of the initial performance test required by 40 CFR 60.8.

- B. The source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification. Relaxation of limitations on the capacity to emit of the equipment which were established to preclude the applicability of regulation 401 KAR 51:017, Prevention of significant deterioration of air quality, or 401 KAR 51:052, Review of new sources in or impacting upon nonattainment areas, is prohibited unless the applicable provisions of these regulations have been satisfied. Alternatively, the Permittee may submit documentation that a proposed activity would not cause the change authorized to become classified as a major modification pursuant to regulations

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

401 KAR 51:017 or 51:052. The “synthetic minor” emission limitations for the sulfur recovery complex are as follows:

Affected Units	maximum emissions (tons/yr)				
	SO ₂	NO _x	VOC	CO	PM ₁₀
No. 1 SRU Thermal Oxidizer	323.0	25.0	1.4	21.0	2.0
No. 2 SRU Thermal Oxidizer					

In addition, sulfur production shall not exceed 628 long tons per day, based on a 365-day rolling average. Also, heat input to each thermal oxidizer shall not exceed 28.6 MMBtu/hr (HHV) based on 365-day rolling average.

Compliance Demonstration Method: The Permittee shall calculate for each day, in tons per year, the rolling 365-day sulfur dioxide emissions based on air flow rate and CEMS data. Compliance with the synthetic minor emission limitations shall be achieved no later than the date of completion of the initial performance test required by 40 CFR 60.8.

3. Testing Requirements: n/a

4. Specific Monitoring Requirements:

- A. The Permittee shall monitor SO₂ to ensure compliance with the requirements in 40 CFR 60.105(a)(5) (401 KAR 60:100) as follows:

[40 CFR 60.105]

“(a)(5) For Claus sulfur recovery plants with oxidation control systems or reduction control systems followed by incineration subject to Sec. 60.104(a)(2)(i), an instrument for continuously monitoring and recording the concentration (dry basis, zero percent excess air) of SO₂ emissions into the atmosphere. The monitor shall include an oxygen monitor for correcting the data for excess air.

(i) The span values for this monitor are 500 ppm SO₂ and 10 percent O₂.

(ii) The performance evaluations for this SO₂ monitor under Sec. 60.13(c) shall use Performance Specification 2. Methods 6 and 3 shall be used for conducting the relative accuracy evaluations.”

- B. The Permittee shall comply with all provisions of 40 CFR 60 Appendix F, Quality Assurance Requirements for Gas Continuous Emission Monitoring Systems Used for Compliance Determination, for SRU #1 and SRU #2 sulfur dioxide continuous emission monitors.

5. Specific Recordkeeping Requirements: n/a

6. Specific Reporting Requirements:

- A. The Permittee shall report excess SO₂ emissions from the SRU #1 and SRU #2 in

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

accordance to the requirements of 40 CFR 60.105(e)(4)(i) (401 KAR 60:100) as follows:

[40 CFR 60.105]

“(e)(4)Sulfur dioxide from Claus sulfur recovery plants. (i) All 12-hour periods during which the average concentration of SO₂ as measured by the SO₂ continuous monitoring system under Sec. 60.105(a)(5) exceeds 250 ppm (dry basis, zero percent excess air);”

- B. The Permittee shall report SO₂ data unavailability for the SRU #1 and SRU #2 in accordance to the requirements of 40 CFR 60.107(e) (401 KAR 60:100) as follows:

[40 CFR 60.107]

“(e)For any periods for which sulfur dioxide or oxides emissions data are not available, the Permittee of the affected facility shall submit a signed statement indicating if any changes were made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit. Operations of the control system and affected facility during periods of data unavailability are to be compared with operation of the control system and affected facility before and following the period of data unavailability.”

- C. The Permittee shall submit semiannually a report of the 365-day rolling sum emissions of SO₂, NO_x, CO, VOC, and PM₁₀ from the sulfur recovery plant.

7. Specific Control Equipment Operating Conditions: n/a

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

NO. 2 VACUUM UNIT**DESCRIPTION**

Shutdown of No. 2 Vacuum Unit (No. 1-2) is required by this permit.

APPLICABLE REGULATIONS**1. Operating Limitations:**

- A. This permit requires the shutdown of the No. 2 Vacuum Unit (No. 1-2). Final shutdown of the No. 2 Vacuum Unit (No. 1-2) is required to occur no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, "date of startup" is defined as the date of completion of the initial performance test required by 40 CFR 60.8.
- B. Shutdown of the No. 2 Vacuum Unit (No. 1-2) will result in the removal of equipment in VOC service as follows:

Component Type	# added	# removed	net change
heavy liquid valves	20	279	-259
gas/vapor valves	0	60	-60
heavy liquid pumps	0	4	-4
Connectors	80	1385	-1305

2. Emission Limitations: n/a**3. Testing Requirements: n/a****4. Specific Monitoring Requirements: n/a****5. Specific Recordkeeping Requirements: n/a****6. Specific Reporting Requirements:**

- A. The Permittee shall submit notification of the shutdown of the No. 2 Vacuum Unit (No. 1-2) within 30 days after the occurrence of said shutdown.

7. Specific Control Equipment Operating Conditions: n/a

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

OLD FCCU

DESCRIPTION

Shutdown of the existing Fluidized Catalytic Cracking Unit (FCCU) (Unit No. 2-1) is required by this permit.

APPLICABLE REGULATIONS

1. Operating Limitations:

- A. This permit requires the shutdown of the old FCCU (Unit 2-1). Final shutdown of the old FCCU (Unit 2-1) is required to occur no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, "date of startup" is defined as the date of completion of the initial performance test required by 40 CFR 60.8.
- B. Shutdown of the old FCCU (Unit 2-1) will result in the removal of equipment in VOC service as follows:

Component Type	# added	# removed	net change
Compressors	0	2	-2
light liquid valves	0	447	-447
heavy liquid valves	0	1873	-1873
gas/vapor valves	0	612	-612
light liquid pumps	0	15	-15
heavy liquid pumps	0	38	-38
pressure relief valves	0	78	-78
Connectors	0	11,728	-11,728

- C. Shutdown of the old FCCU (Unit 2-1) will result in decreases in actual emissions as follows (based on actual emissions from the FCCU Regenerator and FCCU CO Boiler (Unit 2-601-B-9) during the period June 1999 through May 2001).

Affected Units	maximum emissions (tons/yr)				
	SO ₂	NO _x	VOC	CO	PM ₁₀
FCCU Regenerator (2-1) and FCCU CO Boiler (2-601-B-9)	3,193.0	387.0	6.8	776.4	115.6

2. Emission Limitations: n/a

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

3. **Testing Requirements:** n/a
4. **Specific Monitoring Requirements:** n/a
5. **Specific Recordkeeping Requirements:** n/a
6. **Specific Reporting Requirements:**
 - A. The Permittee shall submit notification of the shutdown of the Old FCCU (Unit 2-1) within 30 days after the occurrence of said shutdown.
7. **Specific Control Equipment Operating Conditions:** n/a

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

40 CFR PART 60 SUBPART VV LDAR CONDITIONS**1. Operating Limitations:**

A. Pursuant to Regulations 40 CFR 60.482-2(c), 60.482-3(g), 60.482-7(d), and 60.482-8(c), as referenced by 40 CFR 63.648(a) for equipment in a process unit that is subject to the Subpart VV control option, when a leak is detected:

- i. It shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 60.482-9.
- ii. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

In accordance with 40 CFR 60.482-9:

- iii. Delay of repair of equipment for which leaks have been detected will be allowed if the repair is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown.
- iv. Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service.
- v. Delay of repair for valves will be allowed if:
 1. The Permittee demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and
 2. When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with 40 CFR 60.482-10.
- vi. Delay of repair for pumps will be allowed if:
 1. Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and
 2. Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.
- vii. Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

B. Pursuant to 40 CFR 60.482-10(g), as referenced by 40 CFR 63.648(a) for equipment in a process unit that is subject to the Subpart VV control option, for each closed-vent system, when a leak is detected:

- i. It shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected.
- ii. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

In accordance with 40 CFR 60.482-10(h), delay of repair of a closed-vent system for

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the Permittee determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.

- C. Pursuant to Regulation 40 CFR 60.486(b), as referenced by 40 CFR 63.648(a) for equipment in a process unit that is subject to the Subpart VV control option, when each leak is detected, the following requirements apply:
 - i. A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.
 - ii. The identification on a valve may be removed after it has been monitored for 2 successive months as specified in 40 CFR 60.482-7(c) and no leak has been detected during those 2 months.
 - iii. The identification on equipment except on a valve, may be removed after it has been repaired.
- D. Pursuant to Regulation 40 CFR 60.482-3(a), as referenced by 40 CFR 63.648(a) for compressors in a process unit that is subject to the Subpart VV control option, each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in 40 CFR 60.482-3(h) and (i).
- E. Pursuant to Regulation 40 CFR 60.482-3(b), as referenced by 40 CFR 63.648(a) for compressors in a process unit that is subject to the Subpart VV control option, each compressor seal system shall be:
 - i. Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or
 - ii. Equipped with a barrier fluid system that is connected by a closed vent system to a control device that complies with the requirements of 40 CFR 60.482-10; or
 - iii. Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.
- F. Pursuant to Regulation 40 CFR 60.482-3(c), as referenced by 40 CFR 63.648(a) for compressors in a process unit that is subject to the Subpart VV control option, for each compressor, the barrier fluid system shall be in heavy liquid service or shall not be in VOC service.
- G. Pursuant to Regulation 40 CFR 60.482-3(d), as referenced by 40 CFR 63.648(a) for compressors in a process unit that is subject to the Subpart VV control option, for each compressor, the barrier fluid system shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- H. Pursuant to Regulation 40 CFR 60.482-5, as referenced by 40 CFR 63.648(a) for equipment in a process unit that is subject to the Subpart VV control option:
- i. Each sampling connection system shall be equipped with a closed-purged, closed-loop, or closed-vent system.
 - ii. Each closed-purge, closed-loop, or closed-vent system shall comply with the following requirements:
 1. Return the purged process fluid directly to the process line; or
 2. Collect and recycle the purged process fluid to a process; or
 3. Be designed and operated to capture and transport all the purged process fluid to a control device that complies with the requirements of 40 CFR 60.482-10.
 - iii. In situ sampling systems and sampling systems without purges are exempt from the requirements of H.i and H.ii of this condition.
- I. Pursuant to Regulation 40 CFR 60.482-6, as referenced by 40 CFR 63.648(a) for equipment in a process unit that is subject to the Subpart VV control option:
- i. Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve.
 - ii. The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.
 - iii. Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.
 - iv. When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (i) at all other times.

2. **Emission Limitations:** n/a

3. **Testing Requirements:** n/a

4. **Specific Monitoring Requirements:**

- A. Pursuant to Regulation 40 CFR 60.482-2(a), as referenced by 40 CFR 63.648(a) for equipment in a process unit that is subject to the Subpart VV control option, except for pumps in light liquid service meeting the exemptions in 40 CFR 60.482-2(d), (e), or (f), all pumps in light liquid service shall be:
- i. Monitored monthly to detect leaks by the methods specified in 40 CFR 60.485(b). In accordance with 40 CFR 60.482-2(b)(1), if an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
 - ii. Checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. In accordance with 40 CFR 60.482-2(b)(2), if there are indications of liquids dripping from the pump seal, a leak is detected.
- B. Pursuant to Regulation 40 CFR 60.482-3(e), as referenced by 40 CFR 63.648(a) for

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- compressors in a process unit that is subject to the Subpart VV control option, each sensor, not equipped with an audible alarm, monitoring a compressor shall be checked daily. In accordance with 40 CFR 60.482-3(f), if the sensor indicates failure of the seal system, the barrier system, or both, a leak is detected.
- C. Pursuant to Regulation 40 CFR 60.482-4, as referenced by 40 CFR 63.648(a) for equipment in a process unit that is subject to the Subpart VV control option:
- i. Except during pressure releases, each pressure relief device in gas/vapor service associated with a process unit listed in Table I.a shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in 40 CFR 60.485(c).
 - ii. After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in 40 CFR 60.482-9.
 - iii. No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in 40 CFR 60.485(c).
 - iv. Any pressure relief device that is equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in 40 CFR 60.482-10 is exempted from the requirements of this condition.
- D. Pursuant to Regulations 40 CFR 60.482-7(a), (b) and (c), as referenced by 40 CFR 63.648(a) for equipment in a process unit that is subject to the Subpart VV control option:
- i. Each valve in gas/vapor or light liquid service shall be monitored monthly to detect leaks by the methods specified in 40 CFR 60.485(b) and shall comply with the following, except as provided in paragraphs 40 CFR 60.482-7(f), (g), and (h).
 - ii. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
 - iii. Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected.
 - iv. If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.
- E. Pursuant to Regulation 40 CFR 60.482-8(a), as referenced by 40 CFR 63.648(a) for equipment in a process unit that is subject to the Subpart VV control option, pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors shall be monitored within 5 days by the method specified in 40 CFR 60.485(b) if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method. In accordance with 40 CFR 60.482-8(b), if an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- F. Pursuant to Regulation 40 CFR 60.482-10(e), as referenced by 40 CFR 63.648(a) for equipment in a process unit that is subject to the Subpart VV control option, sampling systems that vent to carbon canisters shall be monitored monthly to check for breakthrough.
- G. Pursuant to Regulation 40 CFR 60.482-10(f)(1), as referenced by 40 CFR 63.648(a), for equipment in a process unit that is subject to the Subpart VV control option, except as provided in paragraphs 40 CFR 60.482-10(i) through (k), each closed-vent system shall be inspected according to the procedures and schedule specified below:
 - i. Conduct an initial inspection according to the procedures in 40 CFR 60.485(b); and
 - ii. Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.In accordance with 40 CFR 60.482-10(g), if an instrument reading of 500 ppm above background or greater is measured, a leak is detected.

5. Specific Recordkeeping Requirements:

- A. Pursuant to Regulation 40 CFR 60.482-10(l), as referenced by 40 CFR 63.648(d)(1) for equipment in a process unit that is subject to the Subpart VV control option, for each closed-vent system, the following information shall be recorded and shall be kept for 5 years in a readily accessible location:
 - i. Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.
 - ii. Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.
 - iii. For each inspection during which a leak is detected, a record of the information specified in 40 CFR 60.486(c).
 - iv. For each inspection conducted in accordance with 40 CFR 60.485(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.
 - v. For each visual inspection conducted in accordance with 40 CFR 60.482-10(f)(1)(ii) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.
- B. Pursuant to Regulation 40 CFR 60.486(c), as referenced by 40 CFR 63.654(d)(1) for equipment in a process unit that is subject to the Subpart VV control option, when each leak is detected, the following information shall be recorded in a log and shall be kept for 5 years in a readily accessible location:
 - i. The instrument and operator identification numbers and the equipment identification number.
 - ii. The date the leak was detected and the dates of each attempt to repair the leak.
 - iii. Repair methods applied in each attempt to repair the leak.
 - iv. "Above 10,000" if the maximum instrument reading measured by the methods

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- specified in 40 CFR 60.485(a) after each repair attempt is equal to or greater than 10,000 ppm.
- v. "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
 - vi. The name of the person whose decision it was that repairs could not be affected without a process shutdown.
 - vii. The expected date of successful repair of the leak if a leak is not repaired within 15 days.
 - viii. Dates of process unit shutdown that occur while the equipment is unrepaired.
 - ix. The date of successful repair of the leak.
- C. Pursuant to Regulation 40 CFR 60.486(d), as referenced by 40 CFR 63.654(d)(1) for equipment in a process unit that is subject to the Subpart VV control option, the following information pertaining to the design requirements for closed-vent systems and control devices described in 40 CFR 60.482-10 shall be recorded and shall be kept for 5 years in a readily accessible location:
- i. Detailed schematics, design specifications, and piping and instrumentation diagrams.
 - ii. The dates and descriptions of any changes in the design specifications.
 - iii. A description of the parameter or parameters monitored, as required in 40 CFR 60.482-10(e) to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.
 - iv. Periods when the closed vent systems and control devices required in 40 CFR 60.482-2, 60.482-3, 60.482-4, and 60.482-5 are not operated as designed, including periods when a flare pilot light does not have a flame.
 - v. Dates of startups and shutdowns of the closed vent systems and control devices required in 40 CFR 60.482-2, 60.482-3, 60.482-4, and 60.482-5.
- D. Pursuant to Regulation 40 CFR 60.486(e), as referenced by 40 CFR 63.654(d)(1) for equipment in a process unit that is subject to the Subpart VV control option, the following information pertaining to all equipment subject to the requirements in 40 CFR 60.482-1 to 60.482-10 shall be recorded in a log that is kept for 5 years in a readily accessible location:
- i. A list of identification numbers for equipment subject to the requirements of this subpart.
 - ii. A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of 40 CFR 60.482-2(e), 60.482-3(i) and 60.482-7(f).
 - iii. The designation of equipment as subject to the requirements of 40 CFR 60.482-2(e), 60.482-3(i), or 60.482-7(f) shall be signed by the Permittee.
 - iv. A list of equipment identification numbers for pressure relief devices required to comply with 40 CFR 60.482-4.
 - v. The dates of each compliance test as required in 40 CFR 60.482-2(e), 60.482-3(i), 60.482-4, and 60.482-7(f).
 - vi. The background level measured during each compliance test.

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- vii. The maximum instrument reading measured at the equipment during each compliance test.
 - viii. A list of identification numbers for equipment in vacuum service.
- E. Pursuant to Regulation 40 CFR 60.486(f), as referenced by 40 CFR 63.654(d)(1) for equipment in a process unit that is subject to the Subpart VV control option, the following information pertaining to all valves subject to the requirements of 40 CFR 60.482-7 (g) and (h) shall be recorded in a log that is kept for 5 years in a readily accessible location:
- i. A list of identification numbers for valves that are designated as unsafe-to-monitor, an explanation for each valve stating why the valve is unsafe-to-monitor, and the plan for monitoring each valve.
 - ii. A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each value.
- F. Pursuant to Regulation 40 CFR 60.486(h), as referenced by 40 CFR 63.654(d)(1) for equipment in a process unit that is subject to the Subpart VV control option, the following information shall be recorded in a log that is kept for 5 years in a readily accessible location:
- i. Design criterion required in 40 CFR 60.482-2(d)(5) and 60.482-3(e)(2) and explanation of the design criterion; and
 - ii. Any changes to this criterion and the reasons for the changes.
- G. Pursuant to Regulation 40 CFR 60.486(j), as referenced by 40 CFR 63.654(d)(1) for equipment in a process unit that is subject to the Subpart VV control option, information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept for 5 years in a readily accessible location.
- H. Pursuant to Regulation 40 CFR 63.654(d)(3), for a process unit that is subject to the Subpart VV control option, the Permittee who determines that a compressor qualifies for the hydrogen service exemption in 40 CFR 63.648(g) shall keep a record of the demonstration required by 40 CFR 63.648(g) for 5 years.
- I. Pursuant to Regulation 40 CFR 63.654(d)(5), for a process unit that is subject to the Subpart VV control option, the Permittee must identify, either by list or location (area or refining process unit), equipment in organic HAP service less than 300 hours per year as defined in 40 CFR 63.641.
- J. Pursuant to Regulation 40 CFR 63.654(d)(6), for a process unit that is subject to the Subpart VV control option, the Permittee must keep a list of reciprocating pumps and compressors determined to be exempt from seal requirements as per 40 CFR 63.648(f) and (i).

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**6. Specific Reporting Requirements:**

- A. Pursuant to Regulation 40 CFR 60.487(c), as referenced by 40 CFR 63.654(d)(1) for equipment in a process unit that is subject to the Subpart VV control option, all semiannual reports to the Administrator shall include the following information:
 - i. Process unit identification.
 - ii. For each month during the semiannual reporting period:
 - 1. Number of valves for which leaks were detected,
 - 2. Number of valves for which leaks were not repaired within 15 calendar days after the leak was detected,
 - 3. Number of pumps for which leaks were detected,
 - 4. Number of pumps for which leaks were not repaired within 15 calendar days after the leak was detected,
 - 5. Number of compressors for which leaks were detected,
 - 6. Number of compressors for which leaks were not repaired within 15 calendar days after the leak was detected, and
 - 7. The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible.
 - iii. Dates of process unit shutdowns, which occurred within the semiannual reporting period.
 - iv. Revisions to items reported according to the initial semiannual report if changes have occurred since the initial report or subsequent revisions to the initial report.
- B. Pursuant to Regulation 40 CFR 60.487(e), as referenced by 40 CFR 63.654(d)(1) for equipment in a process unit that is subject to the Subpart VV control option, the Permittee shall report the results of all performance tests in accordance with 40 CFR 60.8. The provisions of 40 CFR 60.8(d) do not apply to affected facilities subject to this condition except that the Permittee must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests.

7. Specific Control Equipment Operating Conditions: n/a**8. Alternate Monitoring Scenarios:**

- A. Pursuant to Regulation 40 CFR 60.483-1, as referenced by 40 CFR 63.648(a) for equipment in a process unit that is subject to the Subpart VV control option, the Permittee may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent. The following requirements shall be met if the Permittee wishes to comply with an allowable percentage of valves leaking:
 - i. The Permittee must notify the Administrator that the Permittee has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in 40 CFR 60.487(b).
 - ii. A performance test as specified in paragraph iv shall be conducted initially upon designation, annually, and at other times requested by the Administrator.
 - iii. If a valve leak is detected, it shall be repaired in accordance with 40 CFR 60.482-7(d) and (e).

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

- iv. Performance tests shall be conducted in the following manner:
 - 1. All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in 40 CFR 60.485(b).
 - 2. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
 - 3. The leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility.
 - v. The Permittee who elect to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent.
- B. Pursuant to Regulation 40 CFR 60.483-2, as referenced by 40 CFR 63.648(a) for equipment in a process unit that is subject to the Subpart VV control option, the Permittee may elect to comply with one of the alternative work practices specified in paragraphs (ii) and (iii) below. The Permittee must notify the Administrator before implementing one of the alternative work practices, as specified in 40 CFR 60.487(b).
- i. The Permittee shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in 40 CFR 60.482-7.
 - ii. After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, the Permittee may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.
 - iii. After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, the Permittee may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.
 - iv. If the percent of valves leaking is greater than 2.0, the Permittee shall comply with the requirements as described in 40 CFR 60.482-7 but can again elect to use this section.
 - v. The percent of valves leaking shall be determined by dividing the sum of valves found leaking during current monitoring and valves for which repair has been delayed by the total number of valves subject to the requirements of this section.
 - vi. The Permittee must keep a record of the percent of valves found leaking during each leak detection period.

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

40 CFR PART 63 SUBPART H LDAR CONDITIONS**1. Operating Limitations:**

- A. Pursuant to Regulation 40 CFR 63.162(c), each piece of equipment in organic hazardous air pollutant (HAP) service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, shall be identified such that it can be distinguished readily from equipment that is not subject to this subpart. Identification of the equipment does not require physical tagging of the equipment. For example, the equipment may be identified on a plant site plan, in log entries, or by designation of process unit boundaries by some form of weatherproof identification.
- B. Pursuant to Regulation 40 CFR 63.162(f), for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, when each leak is detected as specified in 40 CFR 63.163, 63.168, 63.169, 63.173 and 63.174, the following requirements apply:
 - i. A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.
 - ii. The identification on a valve may be removed after it has been monitored as specified in 40 CFR 63.168(f)(3) and 63.175(e)(7)(i)(D), and no leak has been detected during the follow-up monitoring. If the Permittee elects to comply using the provisions of 40 CFR 63.174(c)(1)(i) of this subpart, the identification on a connector may be removed after it is monitored as specified in 40 CFR 63.174(c)(1)(i) and no leak is detected during that monitoring.
 - iii. The identification which has been placed on equipment determined to have a leak, except for a valve or for a connector that is subject to the provisions of 40 CFR 63.174(c)(1)(i), may be removed after it is repaired.
- C. Pursuant to Regulations 40 CFR 63.163(c), (e)(6)(iii) and (e)(6)(iv), 40 CFR 63.168(f) and (g), 40 CFR 63.169(c) and (d), 40 CFR 63.173(c), (d)(6)(iii) and (d)(6)(iv), and 40 CFR 63.174(d) except as provided in 40 CFR 63.174(g), for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, when a leak is detected:
 - i. It shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided below or in 40 CFR 63.171.
 - ii. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. First attempts at repair include, but are not limited to, the following practices where practicable:
 - 1. Tightening of packing gland nuts,
 - 2. Ensuring that the seal flush is operating at design pressure and temperature,
 - 3. Tightening of bonnet bolts,
 - 4. Replacement of bonnet bolts, and

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

5. Injection of lubricant into lubricated packing.
- iii. For pumps to which a 1,000 parts per million leak definition applies, repair is not required unless an instrument reading of 2,000 parts per million or greater is detected.
- iv. For valves in gas/vapor service or light liquid service, when a leak has been repaired, the valve shall be monitored at least once within the first 3 months after its repair.
 1. The monitoring shall be conducted as specified in 40 CFR 63.180(b) and (c), as appropriate, to determine whether the valve has resumed leaking.
 2. Periodic monitoring required by 40 CFR 63.168(b) through (d) may be used to satisfy the requirements of this condition 1.C.iv, if the timing of the monitoring period coincides with the time specified in this condition 1.C.iv. Alternatively, other monitoring may be performed to satisfy the requirements of this condition 1.C.iv, regardless of whether the timing of the monitoring period for periodic monitoring coincides with the time specified in this condition 1.C.iv.
 3. If a leak is detected by monitoring that is conducted pursuant to condition 1.C.iv of this section, the Permittee shall follow the provisions below, to determine whether that valve must be counted as a leaking valve for purposes of 40 CFR 63.168(e).
 - a. If the Permittee elected to use periodic monitoring required by 40 CFR 63.168(b) through (d) to satisfy the requirements of condition 1.C.iv of this section, then the valve shall be counted as a leaking valve.
 - b. If the Permittee elected to use other monitoring, prior to the periodic monitoring required by 40 CFR 63.168 (b) through (d), to satisfy the requirements of condition 1.C.iv, then the valve shall be counted as a leaking valve unless it is repaired and shown by periodic monitoring not to be leaking.
- v. For equipment identified in 40 CFR 63.169(a) that is not monitored by the method specified in 40 CFR 63.180(b), repaired shall mean that the visual, audible, olfactory, or other indications of a leak to the atmosphere have been eliminated; that no bubbles are observed at potential leak sites during a leak check using soap solution; or that the system will hold a test pressure.

In accordance with 40 CFR 63.171, the following applies when a leak is detected:

- i. Delay of repair of equipment for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown. Repair of this equipment shall occur by the end of the next process unit shutdown.
- ii. Delay of repair of equipment for which leaks have been detected is allowed for equipment that is isolated from the process and that does not remain in organic HAP service.
- iii. Delay of repair for valves, connectors, and agitators is also allowed if:
 1. The Permittee determines that emissions of purged material resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair, and
 2. When repair procedures are affected, the purged material is collected and

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

- destroyed or recovered in a control device complying with 40 CFR 63.172.
- iv. Delay of repair for pumps is also allowed if:
 - 1. Repair requires replacing the existing seal design with a new system that the Permittee has determined under the provisions of 40 CFR 63.176(d) will provide better performance or:
 - a. A dual mechanical seal system that meets the requirements of 40 CFR 63.163(e),
 - b. A pump that meets the requirements of 40 CFR 63.163(f), or
 - c. A closed-vent system and control device that meets the requirements of 40 CFR 63.163(g); and
 - 2. Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.
 - v. Delay of repair beyond a process unit shutdown will be allowed for a valve if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the second process unit shutdown will not be allowed unless the third process unit shutdown occurs sooner than 6 months after the first process unit shutdown.
- D. Pursuant to Regulation 40 CFR 63.166, for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, the following applies:
- i. Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system. Gases displaced during filling of the sample container are not required to be collected or captured.
 - ii. Each closed-purge, closed-loop, or closed-vent system as required by this condition shall:
 - 1. Return the purged process fluid directly to the process line; or
 - 2. Collect and recycle the purged process fluid to a process; or
 - 3. Be designed and operated to capture and transport the purged process fluid to a control device that complies with the requirements of 40 CFR 63.172; or
 - 4. Collect, store, and transport the purged process fluid to a system or facility identified as follows:
 - a. A waste management unit as defined in 40 CFR 63.111, if the waste management unit is subject to, and operated in compliance with the provisions of 40 CFR 63 Subpart G applicable to group 1 wastewater streams. If the purged process fluid does not contain any organic HAP listed in Table 9 of 40 CFR 63 Subpart G, the waste management unit need not be subject to, and operated in compliance with the requirements of 40 CFR 63 Subpart G applicable to group 1 wastewater streams provided the facility has an NPDES permit or sends the wastewater to an NPDES permitted facility.
 - b. A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266; or
 - c. A facility permitted, licensed, or registered by a State to manage municipal or

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261.
- iii. In-situ sampling systems and sampling systems without purges are exempt from the requirements of this condition.
- E. Pursuant to Regulation 40 CFR 63.167, for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, the following applies:
- i. Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided below.
 - ii. The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line, or during maintenance or repair.
 - iii. Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.
 - iv. When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with this condition at all other times.
 - v. Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of this condition.
 - vi. Open-ended valves or lines containing materials which would autocatalytically polymerize or, would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified above, are exempt from the requirements of this condition.
- F. Pursuant to 40 CFR 63.112(e)(2), the Permittee is not required to calculate the annual emission rate specified in 40 CFR 63.112(a).
- G. Pursuant to 40 CFR 63.148(k), the closed-vent system is not subject to the provisions of 40 CFR 63.148 because it is subject to the provisions of 40 CFR 63.172.
- H. Pursuant to 40 CFR 63.162(d), equipment that is in vacuum service is excluded from the requirements of 40 CFR 63 Subpart H.
- I. Pursuant to 40 CFR 63.162(e), any pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, surge control vessel, bottoms receiver, instrumentation system, control device or system that is intended to operate in organic hazardous air pollutant service, as defined in 40 CFR 63.161, for less than 300 hours during the calendar year is exempt from the provisions of 40 CFR Part 63.163 through 63.174 and 63.178, if it is identified as required in 40 CFR 63.181(j).

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

2. **Emission Limitations:** n/a

3. **Testing Requirements:** n/a

4. **Specific Monitoring Requirements:**

A. Pursuant to Regulation 40 CFR 63.163(b), for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, the Permittee shall:

- i. Monitor each pump monthly to detect leaks by the method specified in 40 CFR 63.180(b), except as provided in 40 CFR 63.163 (e) through (h) and (j). In accordance with 40 CFR 63.163(b)(2)(iii)(C), the instrument reading, as determined by the method as specified in 40 CFR 63.180(b), that defines a leak is 1,000 parts per million or greater.
- ii. Each pump shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. If there are indications of liquids dripping from the pump seal, a leak is detected.

B. Pursuant to Regulation 40 CFR 63.163(d), for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, the following applies, except as provided in 40 CFR 63.163(i):

- i. The Permittee shall calculate percent leaking pumps on a process unit basis.
- ii. If, calculated on a 6-month rolling average, the greater of either 10 percent of the pumps in a process unit or three pumps in a process unit leak, the Permittee shall implement a quality improvement program for pumps that complies with the requirements of 40 CFR 63.176.
- iii. The number of pumps at a process unit shall be the sum of all the pumps in organic HAP service, except that pumps found leaking in a continuous process unit within 1 month after start-up of the pump shall not count in the percent leaking pumps calculation for that one monitoring period only.
- iv. Percent leaking pumps shall be determined by the following equation:

$$\% P(L) = ((P(L) - P(S))/(P(T) - P(S))) \times 100$$

where:

% P(L) = Percent leaking pumps

P(L) = Number of pumps found leaking as determined through monthly monitoring as required in condition 4.A of this section.

P(T) = Total pumps in organic HAP service, including those meeting the criteria in 40 CFR 63.163(e) and (f).

P(S) = Number of pumps leaking within 1 month of start-up during the current monitoring period.

C. Pursuant to Regulation 40 CFR 63.163(e), for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, each pump equipped with a dual mechanical seal system

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

that includes a barrier fluid system is exempt from the requirements of 40 CFR 63.163(a) through (d), provided the following requirements are met:

- i. Each dual mechanical seal system is:
 1. Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or
 2. Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control device that complies with the requirements of 40 CFR 63.172; or
 3. Equipped with a closed-loop system that purges the barrier fluid into a process stream.
 - ii. The barrier fluid is not in light liquid service.
 - iii. Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.
 - iv. Each pump is checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.
 1. If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the pump shall be monitored as specified in 40 CFR 63.180(b) to determine if there is a leak of organic HAP in the barrier fluid.
 2. If an instrument reading of 1,000 parts per million or greater is measured, a leak is detected.
 - v. Each sensor as described in paragraph 4.C.iii of this section is observed daily or is equipped with an alarm unless the pump is located within the boundary of an unmanned plant site.
 - vi. The Permittee determines based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal system, the barrier fluid system, or both.
 - vii. If indications of liquids dripping from the pump seal exceed the criteria established in paragraph 4.C.vi of this section, or if, based on the criteria established in paragraph 4.C.vi of this section, the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected.
- D. Pursuant to Regulation 40 CFR 63.165, for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, the following applies:
- i. Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with an instrument reading of less than 500 parts per million above background except as provided below, as measured by the method specified in 40 CFR 63.180(c).
 - ii. After each pressure release, the pressure relief device shall be returned to a condition indicated by an instrument reading of less than 500 parts per million above background, as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in 40 CFR 63.171.
 - iii. No later than 5 calendar days after the pressure release and being returned to organic HAP service, the pressure relief device shall be monitored to confirm the condition

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- indicated by an instrument reading of less than 500 parts per million above background, as measured by the method specified in 40 CFR 63.180(c).
- iv. Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device as described in 40 CFR 63.172 is exempt from the requirements of this condition.
 - v. Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements this condition, provided the Permittee complies with the following requirement: After each pressure release, a rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in 40 CFR 63.171.
- E. Pursuant to Regulation 40 CFR 63.168(d), for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, the Permittee shall monitor valves, except as provided in 40 CFR 63.168(h) and (i), as follows.
- i. In accordance with 40 CFR 63.168(b):
 - 1. The valves shall be monitored to detect leaks by the method specified in 40 CFR 63.180(b).
 - 2. The instrument reading that defines a leak is 500 parts per million or greater.
 - ii. Monitor valves for leaks at the intervals specified below:
 - 1. At process units with 2 percent or greater leaking valves, calculated according to 40 CFR 63.168(e), the Permittee shall monitor each valve once per month.
 - 2. At process units with less than 2 percent leaking valves, the Permittee shall monitor each valve once each quarter, except as provided in E.ii.3 and 4 of this condition.
 - 3. At process units with less than 1 percent leaking valves, the Permittee may elect to monitor each valve once every 2 quarters.
 - 4. At process units with less than 0.5 percent leaking valves, the Permittee may elect to monitor each valve once every 4 quarters.
- F. Pursuant to Regulation 40 CFR 63.169(a) and (b), for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, the following applies:
- i. Pumps, valves, connectors, and agitators in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and instrumentation systems shall be monitored within 5 calendar days by the method specified in 40 CFR 63.180(b) if evidence of a potential leak to the atmosphere is found by visual, audible, olfactory, or any other detection method. If such a potential leak is repaired as required in 40 CFR 63.169(c) and (d) (see 40 CFR Part 63 Subpart H LDAR condition I.1.3, above), it is not necessary to monitor the system for leaks by the method specified in 40 CFR 63.180(b).
 - ii. In accordance with 40 CFR 63.169(b), if an instrument reading of 10,000 parts per

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

million or greater for agitators, 5,000 parts per million or greater for pumps handling polymerizing monomers, 2,000 parts per million for pumps, or 500 parts per million or greater for valves, connectors, instrumentation systems, and pressure relief devices is measured, a leak is detected.

- G. Pursuant to Regulation 40 CFR 63.173(a), (b) and (d), for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, the following applies:
- i. Each agitator shall be monitored monthly to detect leaks by the methods specified in 40 CFR 63.180(b).
 - ii. If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.
 - iii. Each agitator shall be checked by visual inspection each calendar week for indications of liquids dripping from the agitator.
 - iv. If there are indications of liquids dripping from the agitator, a leak is detected.
 - v. Each agitator equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of G.i of this condition, provided the requirements specified below are met:
 1. Each dual mechanical seal system is:
 - a. Operated with the barrier fluid at a pressure that is at all times greater than the agitator stuffing box pressure; or
 - b. Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control device that complies with the requirements of 40 CFR 63.172; or
 - c. Equipped with a closed-loop system that purges the barrier fluid into a process stream.
 2. The barrier fluid is not in light liquid organic HAP service.
 3. Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.
 4. Each agitator is checked by visual inspection each calendar week for indications of liquids dripping from the agitator seal.
 - a. If there are indications of liquids dripping from the agitator seal at the time of the weekly inspection, the agitator shall be monitored as specified in 40 CFR 63.180(b) to determine the presence of organic HAP in the barrier fluid.
 - b. If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.
 5. Each sensor as described in G.v.3 of this condition is observed daily or is equipped with an alarm unless the agitator is located within the boundary of an unmanned plant site.
 6. The Permittee determines based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal system, the barrier fluid system, or both.
 7. If indications of liquids dripping from the agitator seal exceed the criteria established in paragraph G.v.6 of this condition, or if, based on the criteria

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

established in paragraph G.v.6 of this condition, the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected.

- H. Pursuant to Regulation 40 CFR 63.174(a) and (b), for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, the following applies:
- i. The Permittee shall monitor all connectors in gas/vapor and light liquid service, except as provided in 40 CFR 63.174(f) through (h), at the intervals specified in H.ii of this condition.
 1. The connectors shall be monitored to detect leaks by the method specified in 40 CFR 63.180(b) of this subpart.
 2. If an instrument reading greater than or equal to 500 parts per million is measured, a leak is detected.
 - ii. The Permittee shall monitor for leaks as specified below, except as provided in 40 CFR 63.174(c)(2):
 1. Once per year (i.e., 12-month period), if the percent leaking connectors, as determined according to 40 CFR 63.174(i) and (j), in the process unit was 0.5 percent or greater during the last required annual or biennial monitoring period.
 2. Once every 2 years, if the percent leaking connectors, as determined according to 40 CFR 63.174(i) and (j), was less than 0.5 percent during the last required monitoring period. The Permittee may comply with this paragraph by monitoring at least 40 percent of the connectors in the first year and the remainder of the connectors in the second year. The percent leaking connectors will be calculated for the total of all monitoring performed during the 2-year period.
 3. If the Permittee of a process unit in a biennial leak detection and repair program calculates less than 0.5 percent leaking connectors, as determined according to 40 CFR 63.174(i) and (j), from the 2-year monitoring period, the Permittee may monitor the connectors one time every 4 years. The Permittee may comply with the requirements of this paragraph by monitoring at least 20 percent of the connectors each year until all connectors have been monitored within 4 years.
 4. If a process unit complying with the requirements of H. ii of this condition using a 4-year monitoring interval program has greater than or equal to 0.5 percent but less than 1 percent leaking connectors, as determined according to 40 CFR 63.174(i) and (j), the Permittee shall increase the monitoring frequency to one time every 2 years. The Permittee may comply with the requirements of this paragraph by monitoring at least 40 percent of the connectors in the first year and the remainder of the connectors in the second year. The Permittee may again elect to use the provisions of paragraph H.ii.3 of this condition when the percent leaking connectors, as determined according to 40 CFR 63.174(i) and (j), decreases to less than 0.5 percent.
 5. If a process unit complying with requirements of paragraph H.ii.3 of this condition using a 4-year monitoring interval program has 1 percent or greater leaking connectors, as determined according to 40 CFR 63.174(i) and (j), the

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Permittee shall increase the monitoring frequency to one time per year. The Permittee may again elect to use the provisions of paragraph H.ii.3 of this condition when the percent leaking connectors, as determined according to 40 CFR 63.174(i) and (j), decreases to less than 0.5 percent.

- I. Pursuant to Regulation 40 CFR 63.174(c), for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, the following applies:
 - i. Except as provided in paragraph I.ii of this condition, each connector that has been opened or has otherwise had the seal broken shall be monitored for leaks when it is reconnected or within the first 3 months after being returned to organic hazardous air pollutants service. If the monitoring detects a leak, it shall be repaired according to the provisions of 40 CFR 63.174(d), unless it is determined to be nonrepairable, in which case it is counted as a nonrepairable connector for the purposes of 40 CFR 63.174(i)(2).
 - ii. As an alternative to the requirements in paragraph I.1 of this condition, the Permittee may choose not to monitor connectors that have been opened or otherwise had the seal broken. In this case, the Permittee may not count nonrepairable connectors for the purposes of 40 CFR 63.174(i)(2). The Permittee shall calculate the percent leaking connectors for the monitoring periods described in 40 CFR 63.174(b), by setting the nonrepairable component, C (AN), in the equation in 40 CFR 63.174(i)(2) to zero for all monitoring periods.
 - iii. The Permittee may switch alternatives described in paragraphs I.i and I.ii of this condition at the end of the current monitoring period he is in, provided that it is reported as required in 40 CFR 63.182 and begin the new alternative in annual monitoring. The initial monitoring in the new alternative shall be completed no later than 12 months after reporting the switch.
 - iv. As an alternative to the requirements of H ii of this section, each screwed connector 2 inches or less in nominal inside diameter installed in a process unit before the dates specified in paragraph I.iv.3 or I.iv.4 of this condition may:
 1. Comply with the requirements of 40 CFR 63.169, and
 2. Be monitored for leaks within the first 3 months after being returned to organic hazardous air pollutants service after having been opened or otherwise had the seal broken. If that monitoring detects a leak, it shall be repaired according to the provisions of 40 CFR 63.174(d).
 3. For sources subject to 40 CFR 63 Subparts F and I, the provisions of paragraph I iv of this condition apply to screwed connectors installed before December 31, 1992.

5. Specific Recordkeeping Requirements:

- A. Pursuant to Regulation 40 CFR 63.181(b), for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, the following information pertaining to all equipment in each process unit subject to the requirements in 40 CFR 63.162 through 63.174 shall be

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

recorded and the records kept for 5 years:

- i. A list of identification numbers for equipment (except connectors exempt from monitoring and recordkeeping identified in 40 CFR 63.174 and instrumentation systems) in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option. Connectors need not be individually identified if all connectors in a designated area or length of pipe subject to the provisions of this subpart are identified as a group, and the number of connectors subject is indicated.
- ii. A schedule by process unit for monitoring connectors subject to the provisions of 40 CFR 63.174(a) and valves subject to the provisions of 40 CFR 63.168(d).
- iii. A list of identification numbers for equipment that the Permittee elects to equip with a closed-vent system and control device, under the provisions of 40 CFR 63.163(g), 63.164(h), 63.165(c), or 63.173(f).
- iv. A list of identification numbers for compressors that the Permittee elects to designate as operating with an instrument reading of less than 500 parts per million above background, under the provisions of 40 CFR 63.164(i).
- v. A list of identification numbers for pressure relief devices subject to the provisions in 40 CFR 63.165(a).
- vi. A list of identification numbers for pressure relief devices equipped with rupture disks, under the provisions of 40 CFR 63.165(d).
- vii. Identification of instrumentation systems in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option. Individual components in an instrumentation system need not be identified.
- viii. Identification of screwed connectors subject to the requirements of 40 CFR 63.174(c)(2). Identification can be by area or grouping as long as the total number within each group or area is recorded.
- ix. The following information shall be recorded for each dual mechanical seal system:
 1. Design criteria required in 40 CFR 63.163(e)(6)(i), 63.164(e)(2), and 63.173(d)(6)(i) and an explanation of the design criteria; and
 2. Any changes to these criteria and the reasons for the changes.The following information pertaining to all pumps subject to the provisions of 40 CFR 63.163(j), valves subject to the provisions of 40 CFR 63.168(h) and (i), agitators subject to the provisions of 40 CFR 63.173(h) through (j), and connectors subject to the provisions of 40 CFR 63.174(f) through (h) shall be recorded:
 1. Identification of equipment designated as unsafe to monitor, difficult to monitor, or unsafe to inspect and the plan for monitoring or inspecting this equipment.
 2. A list of identification numbers for the equipment that is designated as difficult to monitor, an explanation of why the equipment is difficult to monitor, and the planned schedule for monitoring this equipment.
 3. A list of identification numbers for connectors that are designated as unsafe to repair and an explanation why the connector is unsafe to repair.
- x. A list of valves removed from and added to the process unit, as described in 40 CFR 63.168(e)(1), if the net credits for removed valves is expected to be used.

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- xi. A list of connectors removed from and added to the process unit, as described in 40 CFR 63.174(i)(1), and documentation of the integrity of the weld for any removed connectors, as required in 40 CFR 63.174(j). This is not required unless the net credit for removed connectors is expected to be used.
- B. Pursuant to Regulation 40 CFR 63.181(c), for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, for visual inspections of equipment, the Permittee shall document that the inspection was conducted and the date of the inspection. The Permittee shall maintain records as specified in 40 CFR 63.181(d) for leaking equipment identified in this inspection, except as provided in 40 CFR 63.181(e). These records shall be retained for 5 years.
- C. Pursuant to Regulation 40 CFR 63.181(d), for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, when each leak is detected as specified in 40 CFR 63.163, 63.164, 63.168, 63.169, 63.173, and 63.174, the following information shall be recorded and kept for 5 years:
- i. The instrument and the equipment identification number and the operator name, initials, or identification number.
 - ii. The date the leak was detected and the date of first attempt to repair the leak.
 - iii. The date of successful repair of the leak.
 - iv. Maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A after it is successfully repaired or determined to be nonrepairable.
 - v. "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
 - 1. The Permittee may develop a written procedure that identifies the conditions that justify a delay of repair. The written procedures may be included as part of the startup/shutdown/malfunction plan, required by 40 CFR 63.6(e)(3), for the source or may be part of a separate document that is maintained at the plant site. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.
 - 2. If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion.
 - vi. Dates of process unit shutdowns that occur while the equipment is unrepaired.
 - vii. Identification, either by list, location (area or grouping), or tagging of connectors that have been opened or otherwise had the seal broken since the last monitoring period required in 40 CFR 63.174(b), as described in 40 CFR 63.174(c)(1), unless the Permittee elects to comply with the provisions of 40 CFR 63.174(c)(1)(ii).
 - viii. The date and results of monitoring as required in 40 CFR 63.174(c). If identification of connectors that have been opened or otherwise had the seal broken is made by location under C.viii of this condition, then all connectors within the designated location shall be monitored.

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

- ix. Copies of the periodic reports as specified in 40 CFR 63.182(d), if records are not maintained on a computerized database capable of generating summary reports from the records.
- D. Pursuant to Regulation 40 CFR 63.181(f), for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, the dates and results of each compliance test required for compressors subject to the provisions in 40 CFR 63.164(i) and the dates and results of the monitoring following a pressure release for each pressure relief device subject to the provisions in 40 CFR 63.165(a) and (b). The results shall include:
 - i. The background level measured during each compliance test.
 - ii. The maximum instrument reading measured at each piece of equipment during each compliance test.
- E. Pursuant to Regulation 40 CFR 63.181(h), for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, each Permittee of a process unit subject to the requirements of 40 CFR 63.175 and 63.176 shall maintain the records specified below for the period of the quality improvement program for the process unit.
 - i. For owners or operators who elect to use a reasonable further progress quality improvement program, as specified in 40 CFR 63.175(d):
 - 1. All data required in 40 CFR 63.175(d)(2).
 - 2. The percent leaking valves observed each quarter and the rolling average percent reduction observed in each quarter.
 - 3. The beginning and ending dates while meeting the requirements of 40 CFR 63.175(d).
 - ii. For owners or operators who elect to use a quality improvement program of technology review and improvement, as specified in 40 CFR 63.175(e):
 - 1. All data required in 40 CFR 63.175(e)(2).
 - 2. The percent leaking valves observed each quarter.
 - 3. Documentation of all inspections conducted under the requirements of 40 CFR 63.175(e)(4), and any recommendations for design or specification changes to reduce leak frequency.
 - 4. The beginning and ending dates while meeting the requirements of 40 CFR 63.175(e).
 - iii. For owners or operators subject to the requirements of the pump quality improvement program as specified in 40 CFR 63.176:
 - 1. All data required in 40 CFR 63.176(d)(2).
 - 2. The rolling average percent leaking pumps.
 - 3. Documentation of all inspections conducted under the requirements of 40 CFR 63.176(d)(4), and any recommendations for design or specification changes to reduce leak frequency.
 - 4. The beginning and ending dates while meeting the requirements of 40 CFR 63.176(d).

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- iv. If a leak is not repaired within 15 calendar days after discovery of the leak, the reason for the delay and the expected date of successful repair.
 - v. Records of all analyses required in 40 CFR 63.175(e) and 63.176(d). The records will include the following:
 - 1. A list identifying areas associated with poorer than average performance and the associated service characteristics of the stream, the operating conditions and maintenance practices.
 - 2. The reasons for rejecting specific candidate superior emission performing valve or pump technology from performance trials.
 - 3. The list of candidate superior emission performing valve or pump technologies, and documentation of the performance trial program items required under 40 CFR 63.175(e)(6)(iii) and 63.176(d)(6)(iii).
 - 4. The beginning date and duration of performance trials of each candidate superior emission performing technology.
 - vi. All records documenting the quality assurance program for valves or pumps as specified in 40 CFR 63.175(e)(7) and 63.176(d)(7).
 - vii. Records indicating that all valves or pumps replaced or modified during the period of the quality improvement program are in compliance with the quality assurance requirements in 40 CFR 63.175(e)(7) and 63.176(d)(7).
 - viii. Records documenting compliance with the 20 percent or greater annual replacement rate for pumps as specified in 40 CFR 63.176(d)(8).
 - ix. Information and data to show the corporation has fewer than 100 employees, including employees providing professional and technical contracted services.
- F. Pursuant to Regulation 40 CFR 63.181(i), for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, the Permittee of equipment in heavy liquid service shall comply with the requirements of either paragraph F i or F ii of this condition, as provided in paragraph F iii of this condition.
- i. Retain information, data, and analyses used to determine that a piece of equipment is in heavy liquid service.
 - ii. When requested by the Administrator, demonstrate that the piece of equipment or process is in heavy liquid service.
 - iii. A determination or demonstration that a piece of equipment or process is in heavy liquid service shall include an analysis or demonstration that the process fluids do not meet the definition of "in light liquid service." Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, engineering calculations, or process knowledge.
- G. Pursuant to Regulation 40 CFR 63.181(j), for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, identification, either by list, location (area or group) of equipment in organic HAP service less than 300 hours per year.

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)****6. Specific Reporting Requirements:**

- A. Pursuant to Regulation 40 CFR 63.182(a)(3), for equipment in organic HAP service, as defined in 40 CFR 63.161, associated with a process unit that is subject to the 40 CFR 63 Subpart H compliance option, each Permittee shall submit Periodic Reports in accordance with 40 CFR 63.182(d) as follows:
- i. A report containing the information in paragraphs A ii, A iii and A iv of this condition shall be submitted semiannually starting 6 months after the Notification of Compliance Status, as required in 40 CFR 63.182(c). The first periodic report shall cover the first 6 months after the compliance date specified in 40 CFR 63.100(k)(3). Each subsequent periodic report shall cover the 6-month period following the preceding period.
 - ii. For each process unit complying with the provisions of 40 CFR 63.163 through 63.174, the summary information listed below for each monitoring period during the 6-month period.
 1. The number of valves for which leaks were detected as described in 40 CFR 63.168(b), the percent leaking, and the total number of valves monitored;
 2. The number of valves for which leaks were not repaired as required in 40 CFR 63.168(f), identifying the number of those that are determined nonrepairable;
 3. The number of pumps for which leaks were detected as described in 40 CFR 63.163(b), the percent leaking, and the total number of pumps monitored;
 4. The number of pumps for which leaks were not repaired as required in 40 CFR 63.163(c);
 5. The number of compressors for which leaks were detected as described in 40 CFR 63.164(f);
 6. The number of compressors for which leaks were not repaired as required in 40 CFR 63.164(g);
 7. The number of agitators for which leaks were detected as described in 40 CFR 63.173(a) and (b);
 8. The number of agitators for which leaks were not repaired as required in 40 CFR 63.173(c);
 9. The number of connectors for which leaks were detected as described in 40 CFR 63.174(a), the percent of connectors leaking, and the total number of connectors monitored;
 10. The number of connectors for which leaks were not repaired as required in 40 CFR 63.174(d), identifying the number of those that are determined nonrepairable;
 11. The facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible.
 12. The results of all monitoring to show compliance with 40 CFR 63.164(i), 63.165(a), and 63.172(f) conducted within the semiannual reporting period.
 13. If applicable, the initiation of a monthly monitoring program under 40 CFR 63.168(d)(1)(i), or a quality improvement program under either 40 CFR 63.175 or 63.176.

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

14. If applicable, notification of a change in connector monitoring alternatives as described in 40 CFR 63.174(c)(1).
15. If applicable, the compliance option that has been selected under 40 CFR 63.172(n).
- iii. The information listed in 40 CFR 63.182(c) for the Notification of Compliance Status for process units with later compliance dates. Any revisions to items reported in earlier Notification of Compliance Status, if the method of compliance has changed since the last report.

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

II. COMBUSTION DEVICES

Table II: COMBUSTION DEVICES AND APPLICABLE REGULATIONS

EMISSION UNIT NUMBER	DESCRIPTION	Date Commence d	Fuels burned	Fired Duty (HHV) (MMBtu/hr)	401 KAR 59:015(3)(3)(a)	401 KAR 59:015(4)(1)(c)	401 KAR 59:015(4)(1)(b)	401 KAR 59:015(5)(1)(c)(1)	401 KAR 59:015(5)(1)(b)	401 KAR 59:015(4)(2)(a)	401 KAR 59:015(4)(2)(b)	401 KAR 59:015(6)(1)(a)	40 CFR 60.104(a)(1)	401 KAR 61:015(3)(3)(a)	401 KAR 61:015(4)(1)	401 KAR 61:145(3)(1)
1-2-B-3	No. 2 Crude Charge Heater	1977	RFG/NG	109	x		x				x		x			
2-23-B-3	No. 3 Crude Charge Heater	1972	RFG/NG	177.1										x	x	x
2-23-B-4	No. 3 Crude Charge Heater	1972	RFG/NG	177.1										x	x	x
2-23-B-6	No. 4 Vacuum Charge Heater	1977	RFG/NG	182			x	x			x		x			
2-26-B-2	No. 4 Vacuum Charge Heater	1995	RFG/NG	128.1							x		x	x	x	
2-30-B-1	Sat Gas Plant Heater	1972	RFG/NG	178.2										x	x	x
2-36-B-1	HF Alky Isostripper Reboiler	1978	RFG/NG	95			x	x			x		x			
2-36-B-2	HF Alky Hot Oil Heater	2003	RFG/NG	20		x		x			x		x			
2-103-B-1	LPVGO Hydrotreater Charge Heater	1975	RFG/NG	50	x		x				x		x			
2-103-B-2	LPVGO Hydrotreater Charge Heater	1975	RFG/NG	50	x		x				x		x			
2-103-B-3	LPVGO Hydrotreater Stripper Heater	1975	RFG/NG	55	x		x				x		x			

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Table II: COMBUSTION DEVICES AND APPLICABLE REGULATIONS

EMISSION UNIT NUMBER	DESCRIPTION	Date Commence d	Fuels burned	Fired Duty (HHV) (MMBtu/hr)	401 KAR 59:015(3)(a)	401 KAR 59:015(4)(c)	401 KAR 59:015(4)(b)	401 KAR 59:015(5)(1)(c)(1)	401 KAR 59:015(5)(1)(b)	401 KAR 59:015(4)(2)(a)	401 KAR 59:015(4)(2)(b)	401 KAR 59:015(6)(1)(a)	40 CFR 60.104(a)(1)	401 KAR 61:015(3)(a)	401 KAR 61:015(4)(1)	401 KAR 61:145(3)(1)
2-104-B-1	HPVGO Hydrotreater Charge Heater	1976	RFG/NG	99	x		x				x		x			
2-104-B-2	HPVGO Hydrotreater charge heater	1976	RFG/NG	99	x		x				x		x			
2-106-B-307	SRU #1 Thermal Oxidizer		RFG/NG	28.6									x			
2-120-B-2	SRU #2 Thermal Oxidizer		RFG/NG	28.6									x			
2-116-B-1&2	FCCU Heat Recovery Units (North & South)	1980	RFG/NG	862.4			x		x	x		x	x			
2-121-B-1	No.2 Distillate Desulfurizer Reactor Charge Heater	1993	RFG/NG	61		x		x			x		x			
2-121-B-2	No.2 Distillate Desulfurizer Reactor Charge Heater	1993	RFG/NG	61		x		x			x		x			
2-121-B-3	No.2 Distillate Desulfurizer Stripper Reboiler	1993	RFG/NG	94		x		x			x		x			
2-73-B-1	Hydrogen Reformer Furnace	2002	fuel gas* & NG	401			x		x	x		x	x			

* The fuels burned in the Hydrogen Reformer Furnace include process gas streams from the Hydrogen Generation Unit. These gases are not refinery fuel gas, but are regulated as fuel gas under 40 CFR 60.104(a)(1).

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

APPLICABLE REGULATIONS:

401 KAR 59:015 – New Indirect Heat Exchangers

401 KAR 60:005 – (40 CFR 60 Subpart J) Standards of Performance for Petroleum Refineries

401 KAR 61:015 – Existing Indirect Heat Exchangers

401 KAR 61:145 – Existing Petroleum Refineries

Following the General Conditions for Combustion Devices are descriptions of the individual combustion devices and a listing of specific applicable requirements for each combustion device.

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

GENERAL CONDITIONS FOR COMBUSTION DEVICES**1. Operating Limitations:**

- A. Pursuant to 401 KAR 60.005 and 40 CFR 60.104(a)(1), no fuel gas combustion device listed in Table II above shall burn any fuel gas that contains hydrogen sulfide (H₂S) in excess of 230 mg/dscm (0.10 gr/dscf).

[40 CFR 60.104(a)(1)]

“(a) No Permittee subject to the provisions of this subpart shall:

(1) Burn in any fuel gas combustion device any fuel gas that contains hydrogen sulfide (H₂S) in excess of 230 mg/dscm (0.10 gr/dscf). The combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt from this paragraph.”

- B. Pursuant to 401 KAR 50:055, should fuel gas CEMS or other evidence indicate a potential to exceed the H₂S in fuel gas standard, then the Permittee shall implement the following measures which may represent good air pollution control practices:
- i. The operator shall review the fuel gas system control board for indications as to why the H₂S concentration has increased, including a review of the fuel gas drum operation and the fuel gas flow. Any reasonable changes which can be made at the fuel gas system control board to lower the concentration of the H₂S in the fuel gas shall be made;
 - ii. The Permittee's field operation staff shall be contacted immediately by the operator and shall promptly, physically view the fuel gas drum system and check for proper operation;
 - iii. If the H₂S concentration in any fuel gas drum exceeds the rolling three (3) hour average standard as indicated by the H₂S CEMS, then the Permittee shall utilize the measurements from the H₂S CEMS to determine the compliance status of the fuel gas. If the Permittee elects to utilize the measurements from the H₂S CEMS in lieu of conducting Method 11 tests, the Permittee shall so advise the Division and the H₂S CEMS shall be the method of compliance;
 - iv. Refinery environmental personnel shall be notified and they shall notify the Division and report the exceedance, as documented by the CEMS and identify the cause and the expected duration as specified in condition 6 of the Monitoring, Recordkeeping, and Reporting Section (Section F) of this permit. No oral or written report to the Division shall be required if the standard is not exceeded. However, records identifying the investigative effort shall be kept and made available to Division personnel upon request;
 - v. The Permittee may, at its option, elect to perform a Reference Method 11 compliance test on any fuel gas drum to determine its compliance status. A Reference Method 11 analysis shall be performed on samples, which shall be taken every hour, for the duration of the time period, that the CEMS imply an exceedance of the standard;

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- vi. To the extent practicable, consumption from the fuel gas drum exhibiting the increase/exceedance shall be reduced by using other fuel gas drum supplies to meet system demands or by using other fuels such as propane, butane and/or methane which will reduce the H₂S concentrations. If the foregoing fuel adjustments do not remedy the increase/exceedance, maintenance shall be notified and shall take steps necessary to reduce the H₂S concentration in the fuel gas to below the standard as expeditiously as practicable;
- vii. Operations and maintenance staff shall record their observations and investigative/resolution activities and shall make them available to Division personnel upon request.

2. Emission Limitations:

- A. Pursuant to 401 KAR 59:015(4)(1)(b) and (c), no heater subject to this rule (listed in Table II, above) shall emit particulate matter in excess of an amount determined as follows.

[401 KAR 59:015(4)(1)]

“...Except as provided in Section 3(3) of this regulation no Permittee of an affected facility subject to the provisions of this regulation shall cause to be discharged into the atmosphere from that affected facility, particulate matter in excess of that specified below:

(1) For sources having a total heat input capacity, as determined by Section 3(1) of this regulation, which is:

(b) 250 million BTU per hour or more, the standard is one-tenth (0.10) pounds per million BTU actual heat input;

(c) For heat input values between those specified in paragraphs (a) and (b) of this subsection, the standard in pounds per million BTU actual heat input, is equal to: 0.9634 times that quantity obtained by raising the total heat input capacity (in millions of BTU per hour) to the -0.2356 power;”

Compliance Demonstration Method: While burning only fuel gas and/or natural gas, the Permittee shall be deemed to be in compliance with the applicable particulate matter emission standard.

- B. Pursuant to 59:015(4)(2), no heater subject to this rule (listed in Table II, above) shall emit particulate matter in excess of an amount determined as follows.

[401 KAR 59:015(4)(2)]

“...Except as provided in Section 3(3) of this regulation no Permittee of an affected facility subject to the provisions of this regulation shall cause to be discharged into the atmosphere from that affected facility, particulate matter in excess of that specified below:

(2) Emissions which exhibit greater than twenty (20) percent opacity except:

(a) That, for indirect heat exchangers with heat input capacity of 250 million BTU per hour or more, a maximum of twenty-seven (27) percent opacity shall be

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

permissible for not more than one (1) six (6) minute period in any sixty (60) consecutive minutes.

(b) That, for indirect heat exchangers with heat input capacity of less than 250 million BTU per hour, a maximum of forty (40) percent opacity shall be permissible for not more than six (6) consecutive minutes in any sixty (60) consecutive minutes during cleaning the fire box or blowing soot.

(c) For emissions from an indirect heat exchanger during building a new fire for the period required to bring the boiler up to operating conditions provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.

Compliance Demonstration Method: While burning only fuel gas and/or natural gas, the Permittee shall be deemed to be in compliance with the applicable particulate matter (PM) emission standard.

- C. Pursuant to 401 KAR 59:015(5)(1)(b) and 59:015(5)(1)(c)(1), no heater subject to this rule (listed in Table II, above) shall emit sulfur dioxide in excess of particulate matter in excess of an amount determined as follows.

[401 KAR 59:015(5)(1)]

"...Except as provided in Section 3(3) of this regulation, no Permittee of an affected facility subject to the provisions of this regulation shall cause to be discharged into the atmosphere from that affected facility, any gases which contain sulfur dioxide in excess of that specified below:

(1) For sources which have a total heat input capacity, as determined by Section 3(1) of this regulation, which is:

(b) 250 million BTU per hour or more, the standard is eight-tenths (0.8) pounds per million BTU actual heat input for combustion of liquid and gaseous fuels and one and two-tenths (1.2) pounds per million BTU actual heat input for combustion of solid fuels;

(c) For heat input values between those specified in paragraphs (a) and (b) of this subsection, the standard in pounds per million BTU actual heat input, is equal to:

(1) For combustion of liquid and gaseous fuels, 7.7223 times that quantity obtained by raising the total heat input capacity (in millions of BTU per hour) to the -0.4106 power"

3. Testing Requirements: n/a

4. Specific Monitoring Requirements:

- A. In order to demonstrate compliance with the sulfur dioxide limits of 401 KAR 59:015, the Permittee shall monitor the indirect heat exchangers as follows:
- i. A fuel gas sample shall be collected from each fuel gas drum necessary to characterize the heating value of the fuel combusted in each indirect heat exchanger once every eight (8) hour shift. Each sample shall be analyzed separately to

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

determine the lower heating value of the fuel gas. In the event that a situation occurs which prevents collection or analysis of a sample required herein and which qualifies as a *force majeure* event defined as any event arising from causes not reasonably foreseeable and beyond the control of the Permittee or the Permittee's contractors or consultants, the resolution of the failure to collect or analyze the sample shall be that the requirement for the sample shall be waived by the Division. The remaining sample(s) for that day shall be utilized to determine compliance with the daily standard for heating value in fuel gas. The Permittee shall maintain records of the *force majeure* event and shall make them available to Division personnel upon request.

- ii. Fuel gas flow shall be determined daily for each indirect heat exchanger by correcting the indirect heater fuel gas flow meter data for fuel gas molecular weight and pressure.

- B. Pursuant to the emission monitoring requirements contained in 401 KAR 59:005, Section 4 (see Appendix F); 401 KAR 59:015, Section 7 (see Appendix G); and 40 CFR 60.105(a)(4), the Permittee shall monitor hydrogen sulfide (H₂S) concentration in the fuel gas via continuous monitoring systems located at each fuel gas drum necessary to characterize the sulfur content of the fuel gas being burned. The continuous monitoring systems shall use reference Method 11 or an alternate method approved by the Division. The averaging time for H₂S in fuel gas shall be a three (3) hour rolling average. Fuel gas streams complying with an alternative monitoring plan approved by U.S. EPA pursuant to 40 CFR 60.13(i) shall be exempt from the requirement for a continuous monitoring system.

[40 CFR 60.105(a)(4)]

“(a) Continuous monitoring systems shall be installed, calibrated, maintained, and operated by the Permittee subject to the provisions of this subpart as follows:

(4) In place of the SO₂ monitor in paragraph (a)(3) of this section, an instrument for continuously monitoring and recording the concentration (dry basis) of H₂S in fuel gases before being burned in any fuel gas combustion device.

(i) The span value for this instrument is 425 mg/dscm H₂S.

(ii) Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H₂S in the fuel gas being burned.

(iii) The performance evaluations for this H₂S monitor under 60.13(c) shall use Performance Specification 7. Method 11 shall be used for conducting the relative accuracy evaluations.”

- C. The FCCU Heat Recovery Units are subject to the conditions of 401 KAR 59:015(7) listed below:

[401 KAR 59:015(7)]

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

“The provisions of this section shall apply to any affected facility of more than 250 million BTU per hour rated heat input capacity.

(3) For performance evaluations under 401 KAR 59:005, Section 4(3), and calibration checks under 401 KAR 59:005, Section 4(4), the following procedures shall be used:

(a) Reference Methods 6 or 7, filed by reference in 401 KAR 50:015, as applicable, shall be used for conducting performance evaluations of sulfur dioxide and nitrogen oxides continuous monitoring systems:

(b) Sulfur dioxide or nitric oxide, as applicable, shall be used for preparing calibration gas mixtures under Performance Specification 2 of Appendix B to 40 CFR 60, filed by reference in 401 KAR 50:015.

(c) For affected facilities burning fossil fuel(s), the span value for a continuous monitoring system measuring the opacity of emissions shall be eighty (80), ninety (90), or 100 percent and for a continuous monitoring system measuring sulfur oxides or nitrogen oxides the span value shall be determined as shown in Appendix C of this regulation;

(4) A continuous monitoring system for measuring either oxygen or carbon dioxide in the flue gases, shall be installed, calibrated, maintained and operated by the Permittee.

(5) For any continuous monitoring system installed under subsection (1) of this section, the following conversion procedures shall be used to convert the continuous monitoring data into units of the applicable standards (ng/J, lb/million BTU).

(a) When a continuous monitoring system for measuring oxygen is selected, the measurement of the pollutant concentration and oxygen concentration shall each be on a consistent basis (wet or dry). Alternative procedures approved by the cabinet and the U. S. EPA shall be used when measurements are on a wet basis. When measurements are on a dry basis, the following conversion procedure shall be used $E = (20.9CF)/(20.9 - \% \text{ oxygen})$, where: E, C, F, and % oxygen are determined under subsection (6) of this section.

(b) When a continuous monitoring system for measuring carbon dioxide is selected, the measurement of a pollutant concentration and carbon dioxide concentration shall each be on a consistent basis (wet or dry) and the following conversion procedure shall be used $E = (100 CFC)/(\% \text{ carbon dioxide})$ where E, C, Fc and % carbon dioxide are determined under subsection (6) of this section.

(6) The values used in the equations under subsection (5)(a) and (b) of this section are derived as follows:

(a) E = Pollutant emission, g/million cal (lb/million BTU)

(b) C = Pollutant concentration, g/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each one (1) hour, period by .0000415 Mg/dscm per ppm two and five tenths (2.5) times ten (10) raised to the negative nine (9) power times M lb/dscf per ppm) where M = pollutant molecular weight, g/g mole (lb/lb mole) M = 64.07 for sulfur dioxide and 46.01 for nitrogen oxides.

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(c) F, Fc = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F), and a factor representing a ratio of the volume of carbon dioxide generated to the calorific value of the fuel combusted (Fc), respectively as follows (ASTM designations are filed by reference in 401 KAR 50:015):

3. For liquid fossil fuels including crude, residual, and distillate oils, F = 9220 dscf/million BTU and Fc = 1430 scf CO/million BTU.

4. For gaseous fossil fuels, F = 8740 dscf/million BTU. For natural gas, propane and butane fuels, Fc = 1040 scf CO/million BTU for natural gas, 1200 scf CO/million BTU for propane, and 1260 scf CO/million BTU for butane.

(d) The Permittee may use the equation given in Appendix D of this regulation to determine an F factor (dscm/million cal, or dscf/million BTU) on a dry basis (if it is desired to calculate F on a wet basis, consult with the cabinet) or Fc factor (scm CO2/million cal, or scf CO2/million BTU) on either basis in lieu of the F or Fc factors specified in paragraph (c) of this subsection.

1. H, C, S, N, and O are content by weight of hydrogen, carbon, sulfur, nitrogen, and oxygen (expressed as percent), respectively, as determined on the same basis as GCV by ultimate analysis of the fuel fired using ASTM method D3178.73 or D3176.74 (solid fuels) or computed from results using ASTM methods D1137.53(75), D1945-64(73), or D1946-67(72) (gaseous fuels) as applicable.

2. GCV is the gross calorific value (cal/g, BTU/lb) of the fuel combusted determined by ASTM test methods D2015-66(72) for solid fuels and D1826-64(70) for gaseous fuels as applicable.

(e) For affected facilities firing combinations of fuels, the F or Fc factors determined by paragraphs (c) and (d) of this subsection shall be prorated in accordance with the applicable formula as given in Appendix E of this regulation.

(7) For the purpose of reports required under 401 KAR 59:005, Section 3(3), periods of excess emissions that shall be reported are defined as follows:

(c) Nitrogen oxides. Excess emissions for affected facilities using a continuous monitoring system for measuring nitrogen oxides are defined as any three (3) hour period during which the average emissions (arithmetic average of three (3) contiguous one (1) hour periods) exceed the applicable standards under Section 6 of this regulation."

- D. Each NO_x CEMS required by this Section B.II shall comply with all provisions of 40 CFR 60 Appendix B, Performance Specification 2.
- E. The Permittee shall comply with all provisions of 40 CFR 60 Appendix F, Quality Assurance Requirements for Gas Continuous Emission Monitoring Systems used for Compliance Determination, for each NO_x CEMS and each fuel gas drum H₂S continuous monitoring system.

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**5. Specific Recordkeeping Requirements:**

- A. Pursuant to 61:015(6)(3), for indirect heat exchangers subject to 61:015 (listed in Table II), the Permittee shall maintain records of the information monitored under condition 4.A, above.

[401 KAR 61:015(6)(3)]

“... (3) The rate of fuel burned for each fuel shall be measured daily or at shorter intervals and recorded. The heating value and ash content of fuels shall be ascertained at least once per week and recorded. Where the indirect heat exchanger is used to generate electricity, the average electrical output and the minimum and maximum hourly generation rate, shall be measured and recorded daily.”

6. Specific Reporting Requirements:

- A. All data required by conditions 2.A, 2.B and 4.A above shall be submitted to the Division within 30 days of the end of each semi-annual period in written form, and in electronic format in accordance with the procedures approved by the Division.
- B. The Permittee shall comply with the following emission reporting requirements contained in Regulations 401 KAR 59:005, Sections 3(3) and 4(48); 59:015, Section 7(7); 40 CFR 60.105(e)(3)(ii), 60.106(e); 61:005, Section 3(16); and 61:145, Section 4(2)(a).

[401 KAR 59:005(3)(3)]

“Nothing in this section shall relieve the Permittee from the responsibility of obtaining the appropriate permits required by 401 KAR Chapter 52.

(3) Each Permittee required to install a continuous monitoring system shall submit for every calendar quarter a written report of excess emissions (as defined in applicable sections) to the cabinet. Both a printed report and computer tape or cards shall be furnished in the format specified by the cabinet. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter and shall include the following information:

(a) The magnitude of excess emissions computed in accordance with Section 4(s) of this regulation, any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions;

(b) All hourly averages shall be reported for sulfur dioxide and nitrogen oxides monitors. The hourly averages shall be made available on computer tape or cards;

(c) Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

(d) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments;

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

(e) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report."

[401 KAR 59:005(4)(8)]

"...(8) Owners or operators of all continuous monitoring systems for measurement of opacity shall reduce all data to six (6) minute averages and for systems other than opacity to one (1) hour averages. Six (6) minute opacity averages shall be calculated from twenty-four (24) or more data points equally spaced over each six (6) minute period. For systems other than opacity, one (1) hour averages shall be computed from four (4) or more data points equally spaced over each one (1) hour period. Data recorded during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this subsection. An arithmetic or integrated average of all data may be used. The data output of all continuous monitoring systems may be recorded in reduced or nonreduced form (e.g. ppm pollutant and percent oxygen or lb/million BTU of pollutant). All excess emissions shall be converted into units of the standard using the applicable conversion procedures specified in regulations within this chapter. After conversion into units of the standard the data may be rounded to the same number of significant digits used in the regulation to specify the applicable standard (e.g. rounded to the nearest one (1) percent opacity)."

[401 KAR 59:015(7)(7)]

"...The provisions of this section shall apply to any affected facility of more than 250 million BTU per hour rated heat input capacity.

(7) For the purpose of reports required under 401 KAR 59:005, Section 3(3), periods of excess emissions that shall be reported are defined as follows:

(a) Excess emissions are defined as any six (6) minute period during which the average opacity of emissions exceeds twenty (20) percent opacity, except that one (1) six (6) minute average per hour of up to twenty-seven (27) percent opacity need not be reported.

(b) Sulfur dioxide. Excess emissions for affected facilities are defined as: Any three (3) hour period during which the average emissions (arithmetic average of three (3) contiguous one (1) hour periods) of sulfur dioxide as measured by a continuous monitoring system exceed the applicable standard under Section 5 of this regulation.

(c) Nitrogen oxides. Excess emissions for affected facilities using a continuous monitoring system for measuring nitrogen oxides are defined as any three (3) hour period during which the average emissions (arithmetic average of three (3) contiguous one (1) hour periods) exceed the applicable standards under Section 6 of this regulation."

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

[40 CFR 60.105(e)(3)(ii)]

“(e) For the purpose of reports under 60.7(c), periods of excess emissions that shall be determined and reported are defined as follows:

NOTE: All averages, except for opacity, shall be determined as the arithmetic average of the applicable 1-hour averages, e.g., the rolling 3-hour average shall be determined as the arithmetic average of three contiguous 1-hour averages

(3) Sulfur dioxide from fuel gas combustion.

(ii) All rolling 3-hour periods during which the average concentration of H₂S as measured by the H₂S continuous monitoring system under 60.105(a)(4) exceeds 230 mg/dscm (0.10 gr/dscf).”

[40 CFR 60.106(e)]

“(e) The Permittee shall determine compliance with the H₂S standard in 60.104(a)(1) as follows: Method 11 shall be used to determine the H₂S concentration. The gases entering the sampling train should be at about atmospheric pressure. If the pressure in the refinery fuel gas lines is relatively high, a flow control valve may be used to reduce the pressure. If the line pressure is high enough to operate the sampling train without a vacuum pump, the pump may be eliminated from the sampling train. The sample shall be drawn from a point near the centroid of the fuel gas line. The sampling time and sample volume shall be at least 10 minutes and 0.010 dscm (0.35 dscf). Two samples of equal sampling times shall be taken at about 1-hour intervals. The arithmetic average of these two samples shall constitute a run. For most fuel gases, sampling times exceeding 20 minutes may result in depletion of the collection solution, although fuel gases containing low concentrations of H₂S may necessitate sampling for longer periods of time.”

[401 KAR 61:005(3)(16)]

“(16) Minimum data requirements. The following paragraphs set forth the minimum data reporting requirements. Both a printed summary and computer tape or cards shall be furnished in the format specified by the Division.

(a) Owners or operators of facilities required to install continuous monitoring systems shall submit for every calendar quarter, a written report of excess emissions and the nature and cause of the excess emissions if known. The averaging period used for data reporting should correspond to the averaging period specified in the emission test method used to determine compliance with an emission standard for the pollutant/source category in question. The required report shall include, as a minimum, the data stipulated in this subsection. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter.

(b) For opacity measurements, the summary shall consist of the magnitude in actual percent opacity of six (6) minute averages of opacity greater than the opacity standard in the applicable standard for each hour of operation of the facility. Average values may be obtained by integration over the averaging period or by arithmetically averaging a minimum of four (4) equally spaced, instantaneous opacity measurements per minute. Any time period exempted shall be considered

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

before determining the excess average of opacity (e.g., whenever a regulation allows two (2) minutes of opacity measurements in excess of the standard, the source shall report all opacity averages, in any one (1) hour, in excess of the standard, minus the two (2) minute exemption). If more than one (1) opacity standard applies, excess emissions data must be submitted in relation to all such standards. Opacity data need be reported on computer cards or tape only.

(c) For gaseous measurements the summary shall consist of hourly averages in the units of the applicable standard. The hourly averages shall not appear in the written summary, but shall be made available from the computer tape or cards.

(d) The date and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of system repairs or adjustments shall be reported. Proof of continuous monitoring system performance whenever system repairs or adjustments have been made is required.

(e) When no excess emissions have occurred and the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be included in the report.

(f) Owners or operators of affected facilities shall maintain a file of all information reported in the quarterly summaries, and all other data collected either by the continuous monitoring system or as necessary to convert monitoring data to the units of the applicable standard for a minimum of two (2) years from the date of collection of such data or submission of such summaries."

[401 KAR 61:145(4)(2)(a)]

"...(2) For the purpose of reports under 401 KAR 61:005 periods of excess emissions that shall be reported for sulfur dioxide are defined as follows:

(a) Any three (3) hour period during which the average concentration of hydrogen sulfide in any fuel gas combusted in any fuel gas combustion device subject to Section 3(1) of this regulation exceeds 230 mg/dscm (one-tenth (0.10) gr/dscf), if compliance is achieved by removing hydrogen sulfide from the fuel gas before it is burned; or any three (3) hour period during which the average concentration of sulfur dioxide in the gases discharged into the atmosphere from any fuel gas combustion device subject to Section 3(2) of this regulation exceeds the level specified in Section 3(2) of this regulation if compliance is achieved by removing sulfur dioxide from the combusted fuel gases."

7. Specific Control Equipment Operating Conditions: n/a

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

HYDROGEN REFORMER FURNACE

DESCRIPTION

The Hydrogen Reformer Furnace (No. 2-73-B-1) is a proposed new heater (construction commenced 2002) that will provide process heat to the Hydrogen Generation Unit (No. 2-73). This heater will be fired with pipeline-quality natural gas and pressure swing adsorption (PSA) gas. It will have a nominal rated heat input capacity of 365 MMBtu/hr (lower heating value, LHV).

APPLICABLE REGULATIONS

Applicable requirements for combustion devices, in addition to the following, include the “General Conditions for Combustion Devices” listed above.

1. **Operating Limitations:** n/a

2. **Emission Limitations:**

- A. The source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification. Relaxation of limitations on the capacity to emit of the equipment which were established to preclude the applicability of regulation 401 KAR 51:017, Prevention of significant deterioration of air quality, or 401 KAR 51:052, Review of new sources in or impacting upon nonattainment areas, is prohibited unless the applicable provisions of these regulations have been satisfied. Alternatively, the Permittee may submit documentation that a proposed activity would not cause the change authorized to become classified as a major modification pursuant to regulations 401 KAR 51:017 or 51:052. The “synthetic minor” emission limitations for the Hydrogen Reformer Furnace are as follows:

Affected Units	Maximum emissions (tons/yr)				
	SO ₂	NO _x	VOC	CO	PM ₁₀
Hydrogen Reformer Furnace	1.1	104.6	9.7	70.3	13.3

In addition, heat input to the reformer furnace shall not exceed 401 MMBtu/hr, based on a 365-day rolling average.

Compliance Demonstration Method: The Permittee shall calculate for each day, in tons per year, the rolling 365-day emissions of each pollutant. Emissions of NO_x shall be based upon data obtained from NO_x CEMS. Emissions of CO shall be based upon an emission factor expressed in terms of pounds per million Btu heat input. The emission factor shall be calculated using the heat input rate and the CO emission rate measured

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

during the most recent performance test. Emissions of SO₂, VOC and PM₁₀ shall be based upon emission factors of 0.0006 lb/MMBtu heat input (HHV), 0.0055 lb/MMBtu heat input (HHV), and 0.0076 lb/MMBtu heat input (HHV), respectively.

3. Testing Requirements:

- A. Performance testing shall be conducted to demonstrate compliance with the hydrogen reformer furnace synthetic minor CO emission limitation listed above.
- B. Performance testing of the hydrogen reformer furnace shall be completed within 180 days after startup of the hydrogen generation unit. The performance testing shall be conducted using the methods incorporated by reference in 401 KAR 50:015, or other methods approved by the Division.
- C. The performance test protocol required by the Division shall specify, at a minimum, the CO test method.

4. Specific Monitoring Requirements: n/a**5. Specific Recordkeeping Requirements:**

- A. The Permittee shall maintain daily records of daily heat input rate and 365-day rolling sum heat input rate to the hydrogen reformer furnace.
- B. The Permittee shall calculate and maintain daily records of 365-day rolling sum emissions of each pollutant from the hydrogen reformer furnace. Emissions of NO_x shall be based upon data obtained from NO_x CEMS. Emissions of CO shall be based upon an emission factor, expressed in terms of pounds per million Btu heat input, developed from the most recent performance test. Emissions of SO₂, VOC, and PM₁₀ shall be based upon emission factors of 0.0006 lb/MMBtu heat input (HHV), 0.0055 lb/MMBtu heat input (HHV), and 0.0076 lb/MMBtu heat input (HHV), respectively.

6. Specific Reporting Requirements:

- A. The Permittee shall submit semiannually a report of the 365-day rolling sum emissions of SO₂, NO_x, CO, VOC, and PM₁₀ from the hydrogen reformer furnace.

7. Specific Control Equipment Operating Conditions: n/a

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

NO. 2 CRUDE CHARGE HEATER

DESCRIPTION

The No. 2 Crude Charge Heater (No. 1-2-B-3) is an existing heater (constructed 1977) that provides process heat to the No. 2 Crude Unit (No. 1-2). This heater has a nominal rated heat input capacity of 99 MMBtu/hr (lower heating value, LHV) and is fired with natural gas and refinery fuel gas.

No modification of the No. 2 Crude Charge Heater is authorized under this permit. This heater is included in the permit because the source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification.

APPLICABLE REGULATIONS

Applicable requirements for combustion devices, in addition to the following, include the “General Conditions for Combustion Devices” listed above.

1. Operating Limitations: n/a

2. Emission Limitations:

- A. The source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification. Relaxation of limitations on the capacity to emit of the equipment which were established to preclude the applicability of regulation 401 KAR 51:017, Prevention of significant deterioration of air quality, or 401 KAR 51:052, Review of new sources in or impacting upon nonattainment areas, is prohibited unless the applicable provisions of these regulations have been satisfied. Alternatively, the Permittee may submit documentation that a proposed activity would not cause the change authorized to become classified as a major modification pursuant to regulations 401 KAR 51:017 or 51:052. The “synthetic minor” emission limitations for the No. 2 Crude Charge Heater are as follows:

Affected Units	maximum emissions (tons/yr)				
	SO ₂	NO _x	VOC	CO	PM ₁₀
No. 2 Crude Charge Heater	12.8	47.7	2.6	40.1	3.6

In addition, heat input to the No. 2 Crude Charge Heater shall not exceed 109 MMBtu/hr, based on a 365-day rolling average.

Compliance Demonstration Method: The Permittee shall calculate for each day, in tons per

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

year, the rolling 365-day emissions of each pollutant. Emissions of SO₂ shall be based upon data obtained from H₂S CEMS. Emissions of CO and NO_x shall be based upon an emission factor from the most recent performance test. Emissions of VOC and PM₁₀ shall be based upon emission factors of 0.0055 lb/MMBtu heat input (HHV) and 0.0076 lb/MMBtu heat input (HHV), respectively. Compliance with the synthetic minor emission limitations shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

3. Testing Requirements:

- A. Performance testing shall be conducted to demonstrate compliance with the No. 2 Crude Charge Heater synthetic minor CO and NO_x emission limitation listed above.
- B. Performance testing of the No. 2 Crude Charge Heater shall be completed within 180 days after startup of the new FCC Unit (No. 2-109). The performance testing shall be conducted using the methods incorporated by reference in 401 KAR 50:015, or other methods approved by the Division.
- C. The performance test protocol required by the Division shall specify, at a minimum, the CO and NO_x test method.

4. Specific Monitoring Requirements: n/a**5. Specific Recordkeeping Requirements:**

- A. The Permittee shall maintain daily records of daily heat input rate and 365-day rolling sum heat input rate to the No. 2 Crude Charge Heater.
- B. The Permittee shall calculate and maintain daily records of 365-day rolling sum emissions of each pollutant from the No. 2 Crude Charge Heater. Emissions of SO₂ shall be based upon data obtained from H₂S CEMS. Emissions of CO and NO_x shall be based upon an emission factor, expressed in terms of pounds per million Btu heat input, developed from the most recent performance test. Emissions of VOC and PM₁₀ shall be based upon emission factors of 0.0055 lb/MMBtu heat input (HHV) and 0.0076 lb/MMBtu heat input (HHV), respectively.

6. Specific Reporting Requirements:

- A. The Permittee shall submit semiannually a report of the 365-day rolling sum emissions of SO₂, NO_x, CO, VOC, and PM₁₀ from the No. 2 Crude Charge Heater.

7. Specific Control Equipment Operating Conditions: n/a

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

NO. 3 CRUDE CHARGE HEATERS

DESCRIPTION

The No. 3 Crude Charge Heaters (Nos. 2-23-B-3 and 2-23-B-4) are existing heaters (constructed 1972) that provide process heat to the No. 3 Crude Unit (No. 2-23). These heaters will be retrofitted with low-NO_x burners as part of this project. As modified (modification commenced 2002), each of these heaters will have a nominal rated heat input capacity of 161 MMBtu/hr (lower heating value, LHV). These heaters are fired with natural gas and refinery fuel gas.

APPLICABLE REGULATIONS

Applicable requirements for combustion devices, in addition to the following, include the “General Conditions for Combustion Devices” listed above.

1. **Operating Limitations:** n/a

2. **Emission Limitations:**

A. The source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification. Relaxation of limitations on the capacity to emit of the equipment which were established to preclude the applicability of regulation 401 KAR 51:017, Prevention of significant deterioration of air quality, or 401 KAR 51:052, Review of new sources in or impacting upon nonattainment areas, is prohibited unless the applicable provisions of these regulations have been satisfied. Alternatively, the Permittee may submit documentation that a proposed activity would not cause the change authorized to become classified as a major modification pursuant to regulations 401 KAR 51:017 or 51:052. The “synthetic minor” emission limitations for the No. 3 Crude Charge Heaters are as follows:

Affected Units	maximum emissions (tons/yr)				
	SO ₂	NO _x	VOC	CO	PM ₁₀
No. 3 Crude Charge Heater (2-23-B-3)	20.8	54.3	4.3	65.2	5.9
No. 3 Crude Charge Heater (2-23-B-4)	20.8	54.3	4.3	65.2	5.9

In addition, heat input to the No. 3 Crude Charge Heaters shall not exceed 177.1

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

MMBtu/hr, each, based on a 365-day rolling average.

Compliance Demonstration Method: The Permittee shall calculate for each day, in tons per year, the rolling 365-day emissions of each pollutant from each heater. Emissions of SO₂ and NO_x shall be based upon data obtained from H₂S and NO_x CEMS. Emissions of CO shall be based upon an emission factor from the most recent performance test. Emissions of VOC and PM₁₀ shall be based upon emission factors of 0.0055 lb/MMBtu heat input (HHV) and 0.0076 lb/MMBtu heat input (HHV), respectively. Compliance with the synthetic minor emission limitations shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

3. Testing Requirements:

- A. Performance testing shall be conducted to demonstrate compliance with the No. 3 Crude Charge Heaters synthetic minor CO emission limitation listed above.
- B. Performance testing of the No. 3 Crude Charge Heaters shall be completed within 180 days after startup of the new FCC Unit (No. 2-109). The performance testing shall be conducted using the methods incorporated by reference in 401 KAR 50:015, or other methods approved by the Division.
- C. The performance test protocol required by the Division shall specify, at a minimum, the CO test method.

4. Specific Monitoring Requirements: n/a**5. Specific Recordkeeping Requirements:**

- A. The Permittee shall maintain daily records of daily heat input rate and 365-day rolling sum heat input rate to the No. 3 Crude Charge Heaters.
- B. The Permittee shall calculate and maintain daily records of 365-day rolling sum emissions of each pollutant from the No. 3 Crude Charge Heaters. Emissions of SO₂ and NO_x shall be based upon data obtained from H₂S and NO_x CEMS. Emissions of CO shall be based upon an emission factor, expressed in terms of pounds per million Btu heat input, developed from the most recent performance test. Emissions of VOC and PM₁₀ shall be based upon emission factors of 0.0055 lb/MMBtu heat input (HHV) and 0.0076 lb/MMBtu heat input (HHV), respectively.

6. Specific Reporting Requirements:

- A. The Permittee shall submit semiannually a report of the 365-day rolling sum emissions of SO₂, NO_x, CO, VOC, and PM₁₀ from the No. 3 Crude Charge Heaters.

7. Specific Control Equipment Operating Conditions: n/a

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

NO. 4 VACUUM CHARGE HEATERS**DESCRIPTION**

The existing No. 4 Vacuum Charge Heater (No. 2-26-B-2) is an existing heater (constructed 1995) that provides process heat to the No. 4 Vacuum Unit (No. 2-26). This heater has a nominal rated heat input capacity of 116.5 MMBtu/hr (lower heating value, LHV) and is fired with natural gas and refinery fuel gas. No modification of this heater is authorized under this permit. This heater is included in the permit because the source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification.

An existing heater within the refinery is being converted to serve as a second No. 4 Vacuum Charge Heater. This heater will be assigned Heater No. 2-23-B-6. (This heater is currently in service as the FCCU Charge Heater (No. 2-1-B-8), constructed 1977.) As modified (modification commenced 2002), this heater will have a nominal rated heat input capacity of 165 MMBtu/hr (lower heating value, LHV). It is fired with natural gas and refinery fuel gas.

APPLICABLE REGULATIONS

Applicable requirements for combustion devices, in addition to the following, include the "General Conditions for Combustion Devices" listed above.

1. Operating Limitations: n/a**2. Emission Limitations:**

- A. The source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification. Relaxation of limitations on the capacity to emit of the equipment which were established to preclude the applicability of regulation 401 KAR 51:017, Prevention of significant deterioration of air quality, or 401 KAR 51:052, Review of new sources in or impacting upon nonattainment areas, is prohibited unless the applicable provisions of these regulations have been satisfied. Alternatively, the Permittee may submit documentation that a proposed activity would not cause the change authorized to become classified as a major modification pursuant to regulations 401 KAR 51:017 or 51:052. The "synthetic minor" emission limitations for the No. 4 Vacuum Charge Heaters are as follows:

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Affected Units	maximum emissions (tons/yr)				
	SO ₂	NO _x	VOC	CO	PM ₁₀
No. 4 Vacuum Charge Heater (2-26-B-2)	15.1	39.9	3.1	47.1	4.3
No. 4 Vacuum Charge Heater (2-23-B-6)	21.4	111.3	4.4	66.8	6.0

In addition, heat input to the No. 4 Vacuum Charge Heater (No. 2-26-B-2) shall not exceed 128.1MMBtu/hr (higher heating value, HHV) and heat input to the No. 4 Vacuum Charge Heater (No. 2-23-B-6) shall not exceed 182 MMBtu/hr. Each of these limits is based on a 365-day rolling average.

Compliance Demonstration Method: The Permittee shall calculate for each day, in tons per year, the rolling 365-day emissions of each pollutant from each heater. Emissions of SO₂ shall be based upon data obtained from H₂S CEMS. Emissions of CO and NO_x shall be based upon an emission factor from the most recent performance test. Emissions of VOC and PM₁₀ shall be based upon emission factors of 0.0055 lb/MMBtu heat input (HHV) and 0.0076 lb/MMBtu heat input (HHV), respectively. Compliance with the synthetic minor emission limitations shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

3. Testing Requirements:

- Performance testing shall be conducted to demonstrate compliance with the No. 4 Vacuum Charge Heaters synthetic minor CO and NO_x emission limitation listed above.
- Performance testing of the No. 4 Vacuum Charge Heaters shall be completed within 180 days after startup of the new FCC Unit (No. 2-109). The performance testing shall be conducted using the methods incorporated by reference in 401 KAR 50:015, or other methods approved by the Division.
- The performance test protocol required by the Division shall specify, at a minimum, the CO and NO_x test method.

4. Specific Monitoring Requirements: n/a

5. Specific Recordkeeping Requirements:

- The Permittee shall maintain daily records of daily heat input rate and 365-day rolling sum heat input rate to the No. 4 Vacuum Charge Heaters.
- The Permittee shall calculate and maintain daily records of 365-day rolling sum emissions of each pollutant from the No. 4 Vacuum Charge Heaters. Emissions of SO₂ shall be based upon data obtained from H₂S CEMS. Emissions of CO and NO_x shall be

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

based upon an emission factor, expressed in terms of pounds per million Btu heat input, developed from the most recent performance test. Emissions of VOC and PM₁₀ shall be based upon emission factors of 0.0055 lb/MMBtu heat input (HHV) and 0.0076 lb/MMBtu heat input (HHV), respectively.

6. Specific Reporting Requirements:

- A. The Permittee shall submit semiannually a report of the 365-day rolling sum emissions of SO₂, NO_x, CO, VOC, and PM₁₀ from the No. 4 Vacuum Charge Heaters.

7. Specific Control Equipment Operating Conditions: n/a

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

LPVGO HYDROTREATER HEATERS

DESCRIPTION

The refinery includes three fired heaters (constructed 1975) that provide process heat to the Low-Pressure Vacuum Gas Oil (LPVGO) Hydrotreater (Unit No. 2-103): The LPVGO Hydrotreater Charge Heaters (Nos. 2-103-B-1 and 2-103-B-2) and the LPVGO Hydrotreater Stripper Heater (No. 2-103-B-3). Each of these heaters is fired with natural gas and refinery fuel gas.

No modification of these heaters is authorized under this permit. These heaters are included in the permit because the source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification.

APPLICABLE REGULATIONS

Applicable requirements for combustion devices, in addition to the following, include the “General Conditions for Combustion Devices” listed above.

1. **Operating Limitations:** n/a

2. **Emission Limitations:**

- A. The source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification. Relaxation of limitations on the capacity to emit of the equipment which were established to preclude the applicability of regulation 401 KAR 51:017, Prevention of significant deterioration of air quality, or 401 KAR 51:052, Review of new sources in or impacting upon nonattainment areas, is prohibited unless the applicable provisions of these regulations have been satisfied. Alternatively, the Permittee may submit documentation that a proposed activity would not cause the change authorized to become classified as a major modification pursuant to regulations 401 KAR 51:017 or 51:052. The “synthetic minor” emission limitations for the LPVGO Hydrotreater Charge Heaters and the LPVGO Hydrotreater Stripper Heater are as follows:

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Affected Units	maximum emissions (tons/yr)				
	SO ₂	NO _x	VOC	CO	PM ₁₀
LPVGO Hydrotreater Charge Heater (No. 2-103-B-1)	5.8	21.7	1.2	18.2	1.6
LPVGO Hydrotreater Charge Heater (No. 2-103-B-2)	5.8	21.7	1.2	18.2	1.6
LPVGO Hydrotreater Stripper Heater (No. 2-103-B-3)	6.5	24.1	1.3	20.2	1.8

In addition, heat input to the LPVGO Hydrotreater Charge Heaters shall not exceed 50 MMBtu/hr, each heater, and heat input to the LPVGO Hydrotreater Stripper Reboiler shall not exceed 55 MMBtu/hr. Each of these limits is based on a 365-day rolling average.

Compliance Demonstration Method: The Permittee shall calculate for each day, in tons per year, the rolling 365-day emissions of each pollutant from each heater. Emissions of SO₂ shall be based upon data obtained from H₂S CEMS. Emissions of CO and NO_x shall be based upon an emission factor from the most recent performance test. Emissions of VOC and PM₁₀ shall be based upon emission factors of 0.0055 lb/MMBtu heat input (HHV) and 0.0076 lb/MMBtu heat input (HHV), respectively. Compliance with the synthetic minor emission limitations shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

3. Testing Requirements:

- A. Performance testing shall be conducted to demonstrate compliance with the LPVGO Hydrotreater Fired Heaters synthetic minor CO and NO_x emission limitation listed above.
- B. Performance testing of the LPVGO Hydrotreater Fired Heaters shall be completed within 180 days after startup of the new FCC Unit (No. 2-109). The performance testing shall be conducted using the methods incorporated by reference in 401 KAR 50:015, or other methods approved by the Division.
- C. The performance test protocol required by the Division shall specify, at a minimum, the CO and NO_x test method.

4. Specific Monitoring Requirements: n/a**5. Specific Recordkeeping Requirements:**

- A. The Permittee shall maintain daily records of daily heat input rate and 365-day rolling sum heat input rate to the LPVGO Hydrotreater Fired Heaters.

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

- B. The Permittee shall calculate and maintain daily records of 365-day rolling sum emissions of each pollutant from the LPVGO Hydrotreater Fired Heaters. Emissions of SO₂ shall be based upon data obtained from H₂S CEMS. Emissions of CO and NO_x shall be based upon an emission factor, expressed in terms of pounds per million Btu heat input, from the most recent performance test. Emissions of VOC and PM₁₀ shall be based upon emission factors of 0.0055 lb/MMBtu heat input (HHV) and 0.0076 lb/MMBtu heat input (HHV), respectively.

6. Specific Reporting Requirements:

- A. The Permittee shall submit semiannually a report of the 365-day rolling sum emissions of SO₂, NO_x, CO, VOC, and PM₁₀ from the LPVGO Hydrotreater Fired Heaters.

7. Specific Control Equipment Operating Conditions: n/a

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

HPVGO HYDROTREATER HEATERS**DESCRIPTION**

The HPVGO Hydrotreater Charge Heaters (Nos. 2-104-B-1 and 2-104-B-2, constructed 1976) provide process heat to the High-Pressure Vacuum Gas Oil (HPVGO) Hydrotreater (Unit No. 2-104). These heaters are fired with natural gas and refinery fuel gas.

Other than retrofitting with low-NO_x burners, no modification of these heaters is authorized under this permit. These heaters are included in the permit because the source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification.

APPLICABLE REGULATIONS

Applicable requirements for combustion devices, in addition to the following, include the “General Conditions for Combustion Devices” listed above.

1. Operating Limitations: n/a**2. Emission Limitations:**

- A. The source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification. Relaxation of limitations on the capacity to emit of the equipment which were established to preclude the applicability of regulation 401 KAR 51:017, Prevention of significant deterioration of air quality, or 401 KAR 51:052, Review of new sources in or impacting upon nonattainment areas, is prohibited unless the applicable provisions of these regulations have been satisfied. Alternatively, the Permittee may submit documentation that a proposed activity would not cause the change authorized to become classified as a major modification pursuant to regulations 401 KAR 51:017 or 51:052. The “synthetic minor” emission limitations for the HPVGO Hydrotreater Charge Heaters are as follows:

Affected Units	maximum emissions (tons/yr)				
	SO ₂	NO _x	VOC	CO	PM ₁₀
HPVGO Hydrotreater Charge Heater (No. 2-104-B-1)	11.7	23.8	2.4	36.4	3.3
HPVGO Hydrotreater Charge Heater (No. 2-104-B-2)	11.7	23.8	2.4	36.4	3.3

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

In addition, heat input to the HPVGO Hydrotreater Charge Heaters shall not exceed 99 MMBtu/hr, each heater, based on a 365-day rolling average.

Compliance Demonstration Method: The Permittee shall calculate for each day, in tons per year, the rolling 365-day emissions of each pollutant from each heater. Emissions of SO₂ shall be based upon data obtained from H₂S CEMS. Emissions of CO and NO_x shall be based upon an emission factor from the most recent performance test. Emissions of VOC and PM₁₀ shall be based upon emission factors of 0.0055 lb/MMBtu heat input (HHV) and 0.0076 lb/MMBtu heat input (HHV), respectively. Compliance with the synthetic minor emission limitations shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, "date of startup" is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

3. Testing Requirements:

- A. Performance testing shall be conducted to demonstrate compliance with the HPVGO Hydrotreater Fired Heaters synthetic minor CO and NO_x emission limitation listed above.
- B. Performance testing of the HPVGO Hydrotreater Fired Heaters shall be completed within 180 days after startup of the new FCC Unit (No. 2-109). The performance testing shall be conducted using the methods incorporated by reference in 401 KAR 50:015, or other methods approved by the Division.
- C. The performance test protocol required by the Division shall specify, at a minimum, the CO and NO_x test method.

4. Specific Monitoring Requirements: n/a**5. Specific Recordkeeping Requirements:**

- A. The Permittee shall maintain daily records of daily heat input rate and 365-day rolling sum heat input rate to the HPVGO Hydrotreater Fired Heaters.
- B. The Permittee shall calculate and maintain daily records of 365-day rolling sum emissions of each pollutant from the HPVGO Hydrotreater Fired Heaters. Emissions of SO₂ shall be based upon data obtained from H₂S CEMS. Emissions of CO and NO_x shall be based upon an emission factor, expressed in terms of pounds per million Btu heat input, developed from the most recent performance test. Emissions of VOC and PM₁₀ shall be based upon emission factors of 0.0055 lb/MMBtu heat input (HHV) and 0.0076 lb/MMBtu heat input (HHV), respectively.

6. Specific Reporting Requirements:

- A. The Permittee shall submit semiannually a report of the 365-day rolling sum emissions of SO₂, NO_x, CO, VOC, and PM₁₀ from the HPVGO Hydrotreater Fired Heaters.

7. Specific Control Equipment Operating Conditions: n/a

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

DISTILLATE DESULFURIZER HEATERS**DESCRIPTION**

The refinery includes three fired heaters (constructed 1993) that provide process heat to the Distillate Desulfurizer (Unit No. 2-121): The Distillate Desulfurizer Reactor Charge Heaters (Nos. 2-121-B-1 and 2-121-B-2) and the Distillate Desulfurizer Stripper Reboiler (No. 2-121-B-3). Each of these heaters is fired with natural gas and refinery fuel gas.

No modification of these heaters is authorized under this permit. These heaters are included in the permit because the source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification.

APPLICABLE REGULATIONS

Applicable requirements for combustion devices, in addition to the following, include the “General Conditions for Combustion Devices” listed above.

1. Operating Limitations: n/a**2. Emission Limitations:**

- A. The source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification. Relaxation of limitations on the capacity to emit of the equipment which were established to preclude the applicability of regulation 401 KAR 51:017, Prevention of significant deterioration of air quality, or 401 KAR 51:052, Review of new sources in or impacting upon nonattainment areas, is prohibited unless the applicable provisions of these regulations have been satisfied. Alternatively, the Permittee may submit documentation that a proposed activity would not cause the change authorized to become classified as a major modification pursuant to regulations 401 KAR 51:017 or 51:052. The “synthetic minor” emission limitations for the Distillate Desulfurizer Reactor Charge Heaters and the Distillate Desulfurizer Stripper Reboiler are as follows:

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Affected Units	maximum emissions (tons/yr)				
	SO ₂	NO _x	VOC	CO	PM ₁₀
Distillate Desulfurizer Reactor Charge Heater (No. 2-121-B-1)	7.1	11.5	1.5	22.3	2.0
Distillate Desulfurizer Reactor Charge Heater (No. 2-121-B-2)	7.1	11.5	1.5	22.3	2.0
Distillate Desulfurizer Stripper Reboiler (No. 2-121-B-3)	11.0	17.8	2.3	34.4	3.1

In addition, heat input to the Distillate Desulfurizer Reactor Charge Heaters shall not exceed 61 MMBtu/hr, each heater, and heat input to the Distillate Desulfurizer Stripper Reboiler shall not exceed 94 MMBtu/hr. Each of these limits is based on a 365-day rolling average.

Compliance Demonstration Method: The Permittee shall calculate for each day, in tons per year, the rolling 365-day emissions of each pollutant from each heater. Emissions of SO₂ shall be based upon data obtained from H₂S CEMS. Emissions of NO_x shall be based upon an emission factor from the most recent performance test. Emissions of CO, VOC and PM₁₀ shall be based upon emission factors of 0.084 lb/MMBtu heat input (HHV), 0.0055 lb/MMBtu heat input (HHV) and 0.0076 lb/MMBtu heat input (HHV), respectively. Compliance with the synthetic minor emission limitations shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

3. Testing Requirements:

- Performance testing shall be conducted to demonstrate compliance with the Distillate Desulfurizer Fired Heaters synthetic minor NO_x emission limitation listed above.
- Performance testing of the Distillate Desulfurizer Fired Heaters shall be completed within 180 days after startup of the new FCC Unit (No. 2-109). The performance testing shall be conducted using the methods incorporated by reference in 401 KAR 50:015, or other methods approved by the Division.
- The performance test protocol required by the Division shall specify, at a minimum, the NO_x test method.

4. Specific Monitoring Requirements: n/a

5. Specific Recordkeeping Requirements:

- The Permittee shall maintain daily records of daily heat input rate and 365-day rolling sum heat input rate to the Distillate Desulfurizer Fired Heaters.
- The Permittee shall calculate and maintain daily records of 365-day rolling sum

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

emissions of each pollutant from the Distillate Desulfurizer Fired Heaters. Emissions of SO₂ shall be based upon data obtained from H₂S CEMS. Emissions of NO_x shall be based upon an emission factor, expressed in terms of pounds per million Btu heat input, developed from the most recent performance test. Emissions of CO, VOC and PM₁₀ shall be based upon emission factors of 0.084 lb/MMBtu heat input (HHV), 0.0055 lb/MMBtu heat input (HHV) and 0.0076 lb/MMBtu heat input (HHV), respectively.

6. Specific Reporting Requirements:

- A. The Permittee shall submit semiannually a report of the 365-day rolling sum emissions of SO₂, NO_x, CO, VOC, and PM₁₀ from the Distillate Desulfurizer Fired Heaters.

7. Specific Control Equipment Operating Conditions: n/a

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

HF ALKY ISOSTRIPPER REBOILER**DESCRIPTION**

The HF Alky Isostripper Reboiler (No. 2-36-B-1) is an existing heater (constructed 1978) that provides process heat to the HF Alky Unit (No. 2-36). This heater has a nominal rated heat input capacity of 86 MMBtu/hr (lower heating value, LHV) and is fired with natural gas and refinery fuel gas.

No modification of the HF Alky Isostripper Reboiler is authorized under this permit. This heater is included in the permit because the source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification.

APPLICABLE REGULATIONS

Applicable requirements for combustion devices, in addition to the following, include the “General Conditions for Combustion Devices” listed above.

1. Operating Limitations: n/a**2. Emission Limitations:**

- A. The source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification. Relaxation of limitations on the capacity to emit of the equipment which were established to preclude the applicability of regulation 401 KAR 51:017, Prevention of significant deterioration of air quality, or 401 KAR 51:052, Review of new sources in or impacting upon nonattainment areas, is prohibited unless the applicable provisions of these regulations have been satisfied. Alternatively, the Permittee may submit documentation that a proposed activity would not cause the change authorized to become classified as a major modification pursuant to regulations 401 KAR 51:017 or 51:052. The “synthetic minor” emission limitations for the HF Alky Isostripper Reboiler are as follows:

Affected Units	maximum emissions (tons/yr)				
	SO ₂	NO _x	VOC	CO	PM ₁₀
HF Alky Isostripper Reboiler	11.1	41.4	2.3	34.8	3.1

In addition, heat input to the HF Alky Isostripper Reboiler shall not exceed 95 MMBtu/hr. Each of these limits is based on a 365-day rolling average.

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Compliance Demonstration Method: The Permittee shall calculate for each day, in tons per year, the rolling 365-day emissions of each pollutant. Emissions of SO₂ shall be based upon data obtained from H₂S CEMS. Emissions of CO and NO_x shall be based upon an emission factor from the most recent performance test. Emissions of VOC and PM₁₀ shall be based upon emission factors of 0.0055 lb/MMBtu heat input (HHV) and 0.0076 lb/MMBtu heat input (HHV), respectively. Compliance with the synthetic minor emission limitations shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

3. Testing Requirements:

- A. Performance testing shall be conducted to demonstrate compliance with the HF Alky Isostripper Reboiler synthetic minor CO and NO_x emission limitation listed above.
- B. Performance testing of the HF Alky Isostripper Reboiler shall be completed within 180 days after startup of the new FCC Unit (No. 2-109). The performance testing shall be conducted using the methods incorporated by reference in 401 KAR 50:015, or other methods approved by the Division.
- C. The performance test protocol required by the Division shall specify, at a minimum, the CO and NO_x test method.

4. Specific Monitoring Requirements: n/a**5. Specific Recordkeeping Requirements:**

- A. The Permittee shall maintain daily records of daily heat input rate and 365-day rolling sum heat input rate to the HF Alky Isostripper Reboiler.
- B. The Permittee shall calculate and maintain daily records of 365-day rolling sum emissions of each pollutant from the HF Alky Isostripper Reboiler. Emissions of SO₂ shall be based upon data obtained from H₂S CEMS. Emissions of CO and NO_x shall be based upon an emission factor, expressed in terms of pounds per million Btu heat input, developed from the most recent performance test. Emissions of VOC and PM₁₀ shall be based upon emission factors of 0.0055 lb/MMBtu heat input (HHV) and 0.0076 lb/MMBtu heat input (HHV), respectively.

6. Specific Reporting Requirements:

- A. The Permittee shall submit semiannually a report of the 365-day rolling sum emissions of SO₂, NO_x, CO, VOC, and PM₁₀ from the HF Alky Isostripper Reboiler.

7. Specific Control Equipment Operating Conditions: n/a

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

HF ALKY HOT OIL HEATER

DESCRIPTION

The HF Alky Hot Oil Heater (No. 2-36-B-2) is a new heater (installed 2003) that provides hot oil for process heat to the HF Alky Unit (No. 2-36). This heater has a nominal rated heat input capacity of 18 MMBtu/hr (lower heating value, LHV) and is fired with natural gas and refinery fuel gas.

APPLICABLE REGULATIONS

Applicable requirements for combustion devices, in addition to the following, include the “General Conditions for Combustion Devices” listed above.

1. **Operating Limitations:** n/a

2. **Emission Limitations:**

- A. The source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification. Relaxation of limitations on the capacity to emit of the equipment which were established to preclude the applicability of regulation 401 KAR 51:017, Prevention of significant deterioration of air quality, or 401 KAR 51:052, Review of new sources in or impacting upon nonattainment areas, is prohibited unless the applicable provisions of these regulations have been satisfied. Alternatively, the Permittee may submit documentation that a proposed activity would not cause the change authorized to become classified as a major modification pursuant to regulations 401 KAR 51:017 or 51:052. The “synthetic minor” emission limitations for the HF Alky Hot Oil Heater are as follows:

Affected Units	maximum emissions (tons/yr)				
	SO ₂	NO _x	VOC	CO	PM ₁₀
HF Alky Hot Oil Heater	2.3	8.7	0.5	7.3	0.7

In addition, heat input to the HF Alky Hot Oil Heater shall not exceed 20 MMBtu/hr. Each of these limits is based on a 365-day rolling average.

Compliance Demonstration Method: The Permittee shall calculate for each day, in tons per year, the rolling 365-day emissions of each pollutant. Emissions of SO₂ shall be based upon data obtained from H₂S CEMS. Emissions of NO_x, CO, VOC and PM₁₀ shall be based upon emission factors of 0.10 lb/MMBtu heat input (HHV), 0.084 lb/MMBtu heat input (HHV), 0.0055 lb/MMBtu heat input (HHV), and 0.0076

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

lb/MMBtu heat input (HHV), respectively. Compliance with the synthetic minor emission limitations shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

3. Testing Requirements: n/a**4. Specific Monitoring Requirements:** n/a**5. Specific Recordkeeping Requirements:**

- A. The Permittee shall maintain daily records of daily heat input rate and 365-day rolling sum heat input rate to the HF Alky Hot Oil Heater.
- B. The Permittee shall calculate and maintain daily records of 365-day rolling sum emissions of each pollutant from the HF Alky Isostripper Reboiler. Emissions of SO₂ shall be based upon data obtained from H₂S CEMS. Emissions of NO_x, CO, VOC and PM₁₀ shall be based upon emission factors of 0.10 lb/MMBtu heat input (HHV), 0.084 lb/MMBtu heat input (HHV), 0.0055 lb/MMBtu heat input (HHV), and 0.0076 lb/MMBtu heat input (HHV), respectively.

6. Specific Reporting Requirements:

- A. The Permittee shall submit semiannually a report of the 365-day rolling sum emissions of SO₂, NO_x, CO, VOC, and PM₁₀ from the HF Alky Hot Oil Heater.

7. Specific Control Equipment Operating Conditions: n/a

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

SAT GAS PLANT HEATER**DESCRIPTION**

The Sat Gas Plant Heater (No. 2-30-B-1) is an existing heater (constructed 1972) that provides process heat to the Sat Gas Plant (No. 2-30). This heater will be retrofitted with low-NO_x burners as part of this project. This heater has a nominal rated heat input capacity of 162 MMBtu/hr (lower heating value, LHV). This heater is fired with natural gas and refinery fuel gas.

This heater is included in the permit because the source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification.

APPLICABLE REGULATIONS

Applicable requirements for combustion devices, in addition to the following, include the “General Conditions for Combustion Devices” listed above.

1. Operating Limitations: n/a**2. Emission Limitations:**

- A. The source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification. Relaxation of limitations on the capacity to emit of the equipment which were established to preclude the applicability of regulation 401 KAR 51:017, Prevention of significant deterioration of air quality, or 401 KAR 51:052, Review of new sources in or impacting upon nonattainment areas, is prohibited unless the applicable provisions of these regulations have been satisfied. Alternatively, the Permittee may submit documentation that a proposed activity would not cause the change authorized to become classified as a major modification pursuant to regulations 401 KAR 51:017 or 51:052. The “synthetic minor” emission limitations for the Sat Gas Plant Heater are as follows:

Affected Units	maximum emissions (tons/yr)				
	SO ₂	NO _x	VOC	CO	PM ₁₀
Sat Gas Plant Heater (2-30-B-1)	21.0	54.6	4.3	65.6	5.9

In addition, heat input to the Sat Gas Plant Heater shall not exceed 178.2 MMBtu/hr, based on a 365-day rolling average.

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Compliance Demonstration Method: The Permittee shall calculate for each day, in tons per year, the rolling 365-day emissions of each pollutant from the heater. Emissions of SO₂ and NO_x shall be based upon data obtained from H₂S and NO_x CEMS. Emissions of CO, VOC and PM₁₀ shall be based upon emission factors of 0.084 lb/MMBtu heat input (HHV), 0.0055 lb/MMBtu heat input (HHV) and 0.0076 lb/MMBtu heat input (HHV), respectively. Compliance with the synthetic minor emission limitations shall be achieved no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, “date of startup” is defined as the date of completion of the initial performance test required by 40 CFR 60.8.

3. **Testing Requirements:** n/a

4. **Specific Monitoring Requirements:** n/a

5. **Specific Recordkeeping Requirements:**

- A. The Permittee shall maintain daily records of daily heat input rate and 365-day rolling sum heat input rate to the Sat Gas Plant Heater.
- B. The Permittee shall calculate and maintain daily records of 365-day rolling sum emissions of each pollutant from the Sat Gas Plant Heater. Emissions of SO₂ and NO_x shall be based upon data obtained from H₂S and NO_x CEMS. Emissions of CO, VOC and PM₁₀ shall be based upon emission factors of 0.084 lb/MMBtu heat input (HHV), 0.0055 lb/MMBtu heat input (HHV) and 0.0076 lb/MMBtu heat input (HHV), respectively.

6. **Specific Reporting Requirements:**

- A. The Permittee shall submit semiannually a report of the 365-day rolling sum emissions of SO₂, NO_x, CO, VOC, and PM₁₀ from the Sat Gas Plant Heater.

7. **Specific Control Equipment Operating Conditions:** n/a

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

**FCCU HEAT RECOVERY UNITS AND
SRU THERMAL OXIDIZERS****DESCRIPTION**

Exhaust gases from the catalyst regenerator within the FCCU (Unit No. 2-109) are conveyed to two existing heat recovery units (ID Nos. 2-116-B-1 and 2-116-B-2) for heat recovery. Each of these heat recovery units has a nominal rated heat input capacity of 392 MMBtu/hr (lower heating value, LHV) from natural gas, refinery fuel gas, and regenerator offgas. In addition, heat input to each of these heat recovery units shall not exceed 431 MMBtu/hr (HHV) based on a 365-day rolling average.

Exhaust gases from the SCOT Units (Unit Nos. 2-107 and 2-120) within the Sulfur Recovery Plant (see the "Process Units" section of this permit) are conveyed to two existing thermal oxidizers. Each of these thermal oxidizers (Unit Nos. 2-106-B-307 and 2-120-B-2) has a nominal rated heat input capacity of 26 MMBtu/hr (lower heating value, LHV) from natural gas and refinery fuel gas. In addition, heat input to each thermal oxidizer shall not exceed 28.6 MMBtu/hr (HHV) based on 365-day rolling average.

Under the provisions of 40 CFR 51 Subpart G the FCCU North and South Heat Recovery Units (2-116-B-1&2) are not classified as fossil fuel-fired NO_x sources with a maximum design heat input greater than 250 MMBtu/hr. Heat input to these sources is derived from a combination of fossil fuels (refinery fuel gas and natural gas) and FCCU process off-gases. The amount of heat input provided by the FCCU process off-gases is not classified as fossil fuel heat input, and therefore does not apply towards the 250 MMBtu/hr heat input criteria. For each of these sources, the amount of heat input provided by fossil fuels is less than 250 MMBtu /hr.

APPLICABLE REGULATIONS

Applicable requirements for combustion devices, in addition to the following, include the "General Conditions for Combustion Devices" listed above.

1. **Operating Limitations:** n/a

2. **Emission Limitations:**

- A. The source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification. Relaxation of limitations on the capacity to emit of the equipment which were established to preclude the applicability of regulation 401 KAR 51:017, Prevention of significant deterioration of air quality, or 401 KAR 51:052, Review of new sources in or impacting upon nonattainment areas, is prohibited unless the applicable provisions of these regulations have been satisfied. Alternatively,

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

the Permittee may submit documentation that a proposed activity would not cause the change authorized to become classified as a major modification pursuant to regulations 401 KAR 51:017 or 51:052.

- B. The allowable emissions from the SRU thermal oxidizers (Unit Nos. 2-106-B-307 and 2-120-B-2) are included in the “synthetic minor” emission limitations for the Sulfur Recovery Plant. (See the “Process Units” section of this permit.)
- C. The allowable emissions from the FCCU heat recovery units (ID Nos. 2-116-B-1 and 2-116-B-2) are included in the “synthetic minor” emission limitations for the FCCU. (See the “Process Units” section of this permit.)

3. **Testing Requirements:** n/a

4. **Specific Monitoring Requirements:** n/a

5. **Specific Recordkeeping Requirements:** n/a

6. **Specific Reporting Requirements:** n/a

7. **Specific Control Equipment Operating Conditions:** n/a

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

NO. 2 VACUUM CHARGE HEATER**DESCRIPTION**

Shutdown of the existing No. 2 Vacuum Charge Heater (No. 1-2-B-1) is required by this permit.

APPLICABLE REGULATIONS**1. Operating Limitations:** n/a

- A. This permit requires the shutdown of the No. 2 Vacuum Charge Heater (No. 1-2-B-1). Final shutdown of the No. 2 Vacuum Charge Heater (No. 1-2-B-1) is required to occur no later than the date of startup of the new FCCU (Unit No. 2-109). For the purposes of this permit condition, "date of startup" is defined as the date of completion of the initial performance test required by 40 CFR 60.8.
- B. Shutdown of the No. 2 Vacuum Charge Heater (No. 1-2-B-1) will result in decreases in actual emissions as follows (based on actual emissions from the heater during the period June 1999 through May 2001).

Affected Units	maximum emissions (tons/yr)				
	SO ₂	NO _x	VOC	CO	PM ₁₀
No. 2 Vacuum Charge Heater (No. 1-2-B-1)	0.1	5.5	0.3	4.6	0.4

2. Emission Limitations: n/a**3. Testing Requirements:** n/a**4. Specific Monitoring Requirements:** n/a**5. Specific Recordkeeping Requirements:** n/a**6. Specific Reporting Requirements:**

- A. The Permittee shall submit notification of the shutdown of the No. 2 Vacuum Charge Heater (No. 1-2-B-1) within 30 days after the occurrence of said shutdown.

7. Specific Control Equipment Operating Conditions: n/a

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

III. STORAGE VESSELS

TABLE III. STORAGE VESSELS

Emission Unit No.	Contents Description	Roof Type	Date Commenced	Capacity (gal)	401 KAR 59:050				40 CFR 60 Subpart Kb				40 CFR 60 Subpart K				40 CFR 60 Subpart Ka				401 KAR 61:050				40 CFR 63 Subpart CC			
					vp<1.5	FIXED	IFR	EFR	<20K	<VP	IFR	vp<1.5	IFR	EFR	vp<1.5	IFR	EFR	vp<1.5	FIXED	IFR	EFR	vp<1.5	FIXED	IFR	EFR	G1 IFR	G1 EFR	G2
1-6-T-81	Organic Liquid	cone-welded	1998	3,289,062						x																		s
1-6-T-152	Organic Liquid	cone-welded	1952	2,284,380															x									x
2-606-T-701	Organic Liquid	cone-welded	1942	2,284,380															x									x
2-606-T-702	Organic Liquid	cone-welded	1942	2,284,380															x									x
2-606-T-733	Organic Liquid	External floating-welded	1942	3,412,290																	c							x
2-606-T-734	Organic Liquid	External floating-welded	1942	3,412,290																	x							
2-606-T-783	Organic Liquid	External floating-welded	1965	1,785,000																	c					x		
2-606-T-821	Organic Liquid	cone-welded	1976	2,100,000		x						s																x
2-606-T-845	Organic Liquid	cone-welded	1979	3,360,000		x									s													x
2-606-T-855	Organic Liquid	cone-welded	1987	3,402,000						x																		s
2-606-T-856	Organic Liquid	Internal floating-welded	1988	1,932,000							x														s*			
2-606-T-910	Organic Liquid	internal floating-welded	2003	4,314,800							x														s*			
2-606-T-911	Organic Liquid	internal floating-welded	2004	6,741,800							x														s*			

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

TABLE III. STORAGE VESSELS

Emission Unit No.	Contents Description	Roof Type	Date Commenced	Capacity (gal)	401 KAR 59:050				40 CFR 60 Subpart Kb			40 CFR 60 Subpart K			40 CFR 60 Subpart Ka			401 KAR 61:050				40 CFR 63 Subpart CC		
					vp<1.5	FIXED	IFR	EFR	<20K	<VP	IFR	vp<1.5	IFR	EFR	vp<1.5	IFR	EFR	vp<1.5	FIXED	IFR	EFR	G1 IFR	G1 EFR	G2
2-606-T-912	Organic Liquid	internal floating-welded	2005	6,741,800							x									s*				
2-606-T-913	Organic Liquid	internal floating-welded	2006	6,741,800							x									s*				
2-606-T-920	Organic Liquid	cone-welded	2002	6,300,000						x												s		

s Per 63.110(b)(1), 40 CFR 60 Subpart Kb supersedes 40 CFR 63 Subpart G for both Group 1 and Group 2 tanks.

Per 63.110(b)(2), provisions of 40 CFR 63 Subpart G for Group 1 tanks supersede the provisions of 40 CFR 61 Subpart Y.

Per 63.110(b)(3), 40 CFR 61 Subpart Y supersedes the provisions for 40 CFR 63 subpart G for Group 2 tanks.

Per 63.640(n)(1), 40 CFR 60 Subpart Kb supersedes 40 CFR 63 Subpart CC for both Group 1 and Group 2 tanks, except as specified in 63.640(n)(8).

Per 63.640(n)(5), provisions of 40 CFR 63 Subpart CC for Group 1 tanks supersede the provisions of 40 CFR 60 Subparts K and Ka.

Per 63.640(n)(6), 40 CFR 60 Subparts K and Ka control requirements supersede 40 CFR 60 Subpart CC .

Per 63.640(n)(7), provisions of 40 CFR 63 Subpart CC for Group 2 tanks supersede the provisions of 40 CFR 60 Subparts K and Ka if Subparts K and Ka do not require controls.

s* Because 40 CFR 60 Subpart Kb supersedes 40 CFR 63 Subpart CC for either Group 1 or Group 2 tanks, no group determination was performed for these tanks and they are simply assumed to be Group 1 or Group 2 depending on roof type.

c The standards and requirements for storage vessels with a storage capacity greater than 580 gallons in 40 CFR 60 Subpart Kb, 40 CFR 63 Subpart G (HON--Group 1 only), and 40 CFR 63 Subpart CC (Refinery MACT--Group 1 only) are more stringent than the standards and requirements in regulations 40 CFR 61 Subpart Y, 401 KAR 59:050, 40 CFR 60 Subpart NSPS K, 40 CFR 60 Subpart Ka, and 401 KAR 61:050. Therefore, monitoring of storage vessels per the requirements in either regulation 40 CFR 60 Subpart Kb, 40 CFR 63 Subpart G (HON--Group 1) or 40 CFR 63 Subpart CC (Refinery MACT--Group 1) is accepted as demonstrating compliance with any of these regulations. Additionally, compliance with 401 KAR 59:050 demonstrates compliance with 40 CFR 60 Subpart K or Ka, and compliance with 40 CFR 61 Subpart Y demonstrates compliance with 401 KAR 61:050.

**SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS,
AND OPERATING CONDITIONS (CONTINUED)**

GENERAL CONDITIONS FOR STORAGE VESSELS**DESCRIPTION**

Tank 910, 911, 912, 913, and 920 are proposed new storage vessels. No modifications to the remaining 10 storage vessels are authorized by this permit. These storage vessels are listed in the permit because the source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification.

The emissions from these storage vessels are VOC emissions from standing and working losses.

APPLICABLE REGULATIONS**1. Operating Limitations:**

- A. Pursuant to Regulation 40 CFR 63.138(k), for each residual removed from a Group 1 wastewater stream, as defined in 40 CFR 63.161, the Permittee shall control for air emissions by complying with 40 CFR 63.133 through 63.137 and by complying with one of the provisions below:
- Recycle the residual to a production process or sell the residual for the purpose of recycling. Once a residual is returned to a production process, the residual is no longer subject to this section.
 - Return the residual to the treatment process.
 - Treat the residual to destroy the total combined mass flow rate of Table 8 and/or Table 9 compounds by 99 percent or more, as determined by the procedures specified in 40 CFR 63.145(c) or (d).
 - Comply with the requirements for RCRA treatment options specified in 40 CFR 63.138(h).
- B. This permit authorizes changes to the equipment in VOC service in the tank farm. The authorized installation of new equipment in VOC service and required removal of equipment in VOC service are as follows:

Component Type	# added	# removed	net change
heavy liquid pumps	2	0	2
heavy liquid valves	735	5	730
light liquid pumps	5	0	5
light liquid valves	196	0	196
connectors	3616	21	3595

SECTION B - AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

2. Emission Limitations:

- A. The source has elected to accept permit conditions to preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration, and 401 KAR 51:052, Review of New Sources, to the proposed modification. Relaxation of limitations on the capacity to emit of the equipment which were established to preclude the applicability of regulation 401 KAR 51:017, Prevention of significant deterioration of air quality, or 401 KAR 51:052, Review of new sources in or impacting upon nonattainment areas, is prohibited unless the applicable provisions of these regulations have been satisfied. Alternatively, the Permittee may submit documentation that a proposed activity would not cause the change authorized to become classified as a major modification pursuant to regulations 401 KAR 51:017 or 51:052. The “synthetic minor” emission limitation for the affected storage vessels is a VOC emission limit of 51.9 tons per year, excluding emissions from equipment leaks, based on a 12-month rolling sum, calculated monthly.

Compliance Demonstration Method: The Permittee shall calculate for each calendar month, in tons per year, the rolling 12-month VOC emissions using the emission calculation methodology in the latest version of EPA’s AP-42 emission factor compilation, Chapter 7.

3. Testing Requirements: n/a

4. Specific Monitoring Requirements: n/a

5. Specific Recordkeeping Requirements: n/a

6. Specific Reporting Requirements: n/a

7. Specific Control Equipment Operating Conditions: n/a

SECTION C - INSIGNIFICANT ACTIVITIES

The following listed activities have been determined to be insignificant activities for this source pursuant to 401 KAR 52:020, Section 6. While these activities are designated as insignificant the Permittee must comply with the applicable regulation and some minimal level of periodic monitoring may be necessary.

DescriptionGenerally Applicable Regulation

None

None

SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

1. Emissions of regulated air pollutants, as measured by methods referenced in 401 KAR 50:015, Section 1, shall not exceed the respective limitations specified herein.

SECTION E - SOURCE CONTROL EQUIPMENT REQUIREMENTS

1. Pursuant to 401 KAR 50:055, Section 2(5), at all times, including periods of startup, shutdown and malfunction, the Permittee shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Division which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

SECTION F - MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS

1. When continuing compliance is demonstrated by periodic testing or instrumental monitoring the Permittee shall compile records of required monitoring information that include:
 - a. Date, place as defined in this permit, and time of sampling or measurements.
 - b. Analyses performance dates;
 - c. Company or entity that performed analyses;
 - d. Analytical techniques or methods used;
 - e. Analyses results; and
 - f. Operating conditions during time of sampling or measurement.[Material incorporated by reference by 401 KAR 52:020, Section 1b (IV) 1]
2. Records of all required monitoring data and support information, including calibrations, maintenance records, and original strip chart recordings, and copies of all reports required by the Division for Air Quality, shall be retained by the Permittee for a period of five years and shall be made available for inspection upon request by any duly authorized representative of the Division for Air Quality. [Material incorporated by reference by 401 KAR 52:020, Sections 1b(IV) 2 and 1a(8)]
3. In accordance with the requirements of 401 KAR 52:020 Section 3(1)h the Permittee shall allow authorized representatives of the Cabinet to perform the following during reasonable times:
 - a. Enter upon the premises to inspect any facility, equipment (including air pollution control equipment), practice, or operation;
 - b. To access and copy any records required by the permit:
 - c. Inspect, at reasonable times, any facilities, equipment (including monitoring and pollution control equipment), practices, or operations required by the permit. Reasonable times are defined as during all hours of operation, during normal office hours; or during an emergency.
 - d. Sample or monitor, at reasonable times, substances or parameters to assure compliance with the permit or any applicable requirements.
 - e. Reasonable times are defined as during all hours of operation, during normal office hours; or during an emergency.
4. No person shall obstruct, hamper, or interfere with any Cabinet employee or authorized representative while in the process of carrying out official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.
5. Summary reports of any monitoring required by this permit, other than CEMS or COMS, shall be submitted to the Regional Office listed on the front of this permit at least every six (6) months during the life of this permit, unless otherwise stated in this permit. For emission units that were still under construction or which had not commenced operation at the end of the 6-month period covered by the report and are subject to monitoring requirements in this permit, the report shall indicate that no monitoring was performed during the previous six months because the emission unit was not in operation.
[Material incorporated by reference by 401 KAR 52:020, Section 1b (V) 1]

SECTION F - MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS (CONTINUED)

6. The semi-annual reports are due prior to January 30th and July 30th of each year. Data from the continuous emission and opacity monitors shall be reported to the Technical Services Branch in accordance with the requirements of 401 KAR 59:005, General Provisions, Section 3(3). All reports shall be certified by a responsible official pursuant to 401 KAR 52:020 Section 23. All deviations from permit requirements shall be clearly identified in the reports.
7. In accordance with the provisions of 401 KAR 50:055, Section 1 the Permittee shall notify the Regional Office listed on the front of this permit concerning startups, shutdowns, or malfunctions as follows:
 - a. When emissions during any planned shutdowns and ensuing startups will exceed the standards notification shall be made no later than three (3) days before the planned shutdown, or immediately following the decision to shut down, if the shutdown is due to events which could not have been foreseen three (3) days before the shutdown.
 - b. When emissions due to malfunctions, unplanned shutdowns and ensuing startups are or may be in excess of the standards notification shall be made as promptly as possible by telephone (or other electronic media) and shall cause written notice upon request.
8. The Permittee shall report emission related exceedances from permit requirements including those attributed to upset conditions (other than emission exceedances covered by Section F.7. above) to the Regional Office listed on the front of this permit within *30 days*. Other deviations from permit requirements shall *be included in the semiannual report required by Section F.6.* [Material incorporated by reference by 401 KAR 52:020, Section 1b V 3, 4.]
9. Pursuant to 401 KAR 52:020, Permits, Section 21, the Permittee shall certify compliance with the terms and conditions contained in this permit, by completing and returning a Compliance Certification Form (DEP 7007CC) (or an alternative approved by the regional office) to the Regional Office listed on the front of this permit and the U.S. EPA in accordance with the following requirements:
 - a. Identification of the term or condition;
 - b. Compliance status of each term or condition of the permit;
 - c. Whether compliance was continuous or intermittent;
 - d. The method used for determining the compliance status for the source, currently and over the reporting period, and
 - e. For an emissions unit that was still under construction or which has not commenced operation at the end of the 12-month period covered by the annual compliance certification, the Permittee shall indicate that the unit is under construction and that compliance with any applicable requirements will be demonstrated within the timeframes specified in the permit.
 - f. The certification shall be postmarked by January 30th of each year. Annual compliance certifications should be mailed to the following addresses:

SECTION F - MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS (CONTINUED)

**Division for Air Quality
Ashland Regional Office
1550 Wolohan Drive, Suite 1
Ashland, KY 41102-8942**

**U.S. EPA Region 4
Air Enforcement Branch
Atlanta Federal Center
61 Forsyth St.
Atlanta, GA 30303-8960**

**Division for Air Quality
Central Files
803 Schenkel Lane
Frankfort, KY 40601**

10. In accordance with 401 KAR 52:020, Section 22, the Permittee shall provide the Division with all information necessary to determine its subject emissions within thirty (30) days of the date the KYEIS emission survey is mailed to the Permittee.
11. Pursuant to Section VII.3 of the policy manual of the Division for Air Quality as referenced in 401 KAR 50:016, Section 1(1), results of performance test(s) required by the permit shall be submitted to the Division by the source or its representative within forty-five (45) days after the completion of the fieldwork.

SECTION G – GENERAL PROVISIONS

(a) General Compliance Requirements

1. The Permittee shall comply with all conditions of this permit. Noncompliance shall be a violation of 401 KAR 52:020 and of the Clean Air Act and is grounds for enforcement action including termination, revocation and reissuance, revision or denial of a permit. [Material incorporated by reference by 401 KAR 52:020, Section 1a, 3]
2. The filing of a request by the Permittee for any permit revision, revocation, reissuance, or termination, or of a notification of a planned change or anticipated noncompliance, shall not stay any permit condition. [Material incorporated by reference by 401 KAR 52:020, Section 1a, 6]
3. This permit may be revised, revoked, reopened and reissued, or terminated for cause in accordance with 401 KAR 52:020, Section 19. The permit will be reopened for cause and revised accordingly under the following circumstances:
 - a. If additional requirements become applicable to the source and the remaining permit term is three (3) years or longer. In this case, the reopening shall be completed no later than eighteen (18) months after promulgation of the applicable requirement. A reopening shall not be required if compliance with the applicable requirement is not required until after the date on which the permit is due to expire, unless this permit or any of its terms and conditions have been extended pursuant to 401 KAR 52:020, Section 12;
 - b. The Cabinet or the U. S. EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements;
 - c. The Cabinet or the U. S. EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit;

Proceedings to reopen and reissue a permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists. Reopenings shall be made as expeditiously as practicable. Reopenings shall not be initiated before a notice of intent to reopen is provided to the source by the Division, at least thirty (30) days in advance of the date the permit is to be reopened, except that the Division may provide a shorter time period in the case of an emergency.

4. The Permittee shall furnish information upon requested by the cabinet to determine if cause exists for modifying, revoking and reissuing, or terminating the permit; or compliance with the permit. [Material incorporated by reference by 401 KAR 52:020, Section 1a, 7,8]
5. The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such facts or corrected information to the permitting authority. [Material incorporated by reference by 401 KAR 52:020, Section 7(1)]
6. Any condition or portion of this permit which becomes suspended or is ruled invalid as a

SECTION G – GENERAL PROVISIONS (CONTINUED)

- result of any legal or other action shall not invalidate any other portion or condition of this permit. [Material incorporated by reference by 401 KAR 52:020, Section 1a, 14]
7. The Permittee shall not use as a defense in an enforcement action the contention that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance. [Material incorporated by reference by 401 KAR 52:020, Section 1a, 4]
 8. Except for requirements identified in this permit as state-origin requirements, all terms and conditions shall be enforceable by the United States Environmental Protection Agency and citizens of the United States. [Material incorporated by reference by 401 KAR 52:020, Section 1a, 15) b]
 9. This permit shall be subject to suspension if the Permittee fails to pay all emissions fees within 90 days after the date of notice as specified in 401 KAR 50:038, Section 3(6). [Material incorporated by reference by 401 KAR 52:020, Section 1a, 10]
 10. Nothing in this permit shall alter or affect the liability of the Permittee for any violation of applicable requirements prior to or at the time of permit issuance. [401 KAR 52:020, Section 11(3)(b)]
 11. This permit does not convey property rights or exclusive privileges. [Material incorporated by reference by 401 KAR 52:020, Section 1a, 9]
 12. Issuance of this permit does not relieve the Permittee from the responsibility of obtaining any other permits, licenses, or approvals required by the Kentucky Cabinet for Natural Resources and Environmental Protection or any other federal, state, or local agency.
 13. Nothing in this permit shall alter or affect the authority of U.S. EPA to obtain information pursuant to Federal Statute 42 USC 7414, Inspections, monitoring, and entry. [401 KAR 52:020, Section 11(3)(d)].
 14. Nothing in this permit shall alter or affect the authority of U.S. EPA to impose emergency orders pursuant to Federal Statute 42 USC 7603, Emergency orders. [401 KAR 52:020, Section 11(3)(a)]
 15. Permit Shield - A permit shield shall not protect the Permittee from enforcement actions for violating an applicable requirement prior to or at the time of permit issuance. Compliance with the conditions of a permit shall be considered compliance with:
 - (a) Applicable requirements that are included and specifically identified in the permit and
 - (b) Non-applicable requirements expressly identified in this permit.

SECTION G – GENERAL PROVISIONS (CONTINUED)**(b) Permit Expiration and Reapplication Requirements**

1. This permit shall remain in effect for a fixed term of five (5) years following the original date of issue. Permit expiration shall terminate the source's right to operate unless a timely and complete renewal application has been submitted to the Division at least six months prior to the expiration date of the permit. Upon a timely and complete submittal, the authorization to operate within the terms and conditions of this permit, including any permit shield, shall remain in effect beyond the expiration date, until the renewal permit is issued or denied by the Division. [401 KAR 52:020, Section 12]
2. The authority to operate granted shall cease to apply if the source fails to submit additional information requested by the Division after the completeness determination has been made on any application, by whatever deadline the Division sets. [401 KAR 52:020 Section 8(2)]

(c) Permit Revisions

1. A minor permit revision procedure may be used for permit revisions involving the use of economic incentive, marketable permit, emission trading, and other similar approaches, to the extent that these minor permit revision procedures are explicitly provided for in the SIP or in applicable requirements and meet the relevant requirements of 401 KAR 52:020, Section 14(2).
2. This permit is not transferable by the Permittee. Future the Permittee shall obtain a new permit from the Division for Air Quality. The new permit may be processed as an administrative amendment if no other change in this permit is necessary, and provided that a written agreement containing a specific date for transfer of permit responsibility coverage and liability between the current and new Permittee has been submitted to the permitting authority within ten (10) days following the transfer.

(d) Construction, Start-Up, and Initial Compliance Demonstration Requirements

1. Construction of process and/or air pollution control equipment authorized by this permit shall be conducted and completed only in compliance with the conditions of this permit.
2. Within thirty (30) days following commencement of construction and within fifteen (15) days following start-up and attainment of the maximum production rate specified in the permit application, or within fifteen (15) days following the issuance date of this permit, whichever is later, the Permittee shall furnish to the Regional Office listed on the front of this permit in writing, with a copy to the Division's Frankfort Central Office, notification of the following:
 - a. The date when construction commenced.
 - b. The date of start-up of the affected facilities listed in this permit.
 - c. The date when the maximum production rate specified in the permit application was achieved.
3. Pursuant to 401 KAR 52:020, Section 3(2), unless construction is commenced within eighteen (18) months after the permit is issued, or begins but is discontinued for a period of eighteen (18) months or is not completed within a reasonable timeframe then the

SECTION G – GENERAL PROVISIONS (CONTINUED)

construction and operating authority granted by this permit for those affected facilities for which construction was not completed shall immediately become invalid. Upon written request, the cabinet may extend these time periods if the source shows good cause.

4. For those affected facilities for which construction is authorized by this permit, a source shall be allowed to construct with the proposed permit. Operational or final permit approval is not granted by this permit until compliance with the applicable standards specified herein has been demonstrated pursuant to 401 KAR 50:055. If compliance is not demonstrated within the prescribed timeframe provided in 401 KAR 50:055, the source shall operate thereafter only for the purpose of demonstrating compliance, unless otherwise authorized by Section I of this permit or order of the cabinet.
5. This permit shall allow time for the initial start-up, operation, and compliance demonstration of the affected facilities listed herein. However, within sixty (60) days after achieving the maximum production rate at which the affected facilities will be operated but not later than 180 days after initial start-up of such facilities, the Permittee shall conduct a performance demonstration (test) on the affected facilities in accordance with 401 KAR 50:055, General compliance requirements. These performance tests must also be conducted in accordance with General Provisions G(d)6 of this permit and the Permittee must furnish to the Division for Air Quality's Frankfort Central Office a written report of the results of such performance test.
6. Terms and conditions in this permit established pursuant to the construction authority of 401 KAR 51:017 or 401 KAR 51:052 shall not expire.
7. Pursuant to Section VII 2.(1) of the policy manual of the Division for Air Quality as referenced by 401 KAR 50:016, Section 1.(1), at least one month prior to the date of the required performance test, the Permittee shall complete and return a Compliance Test Protocol (Form DEP 6027) to the Division's Frankfort Central Office. Pursuant to 401 KAR 50:045, Section 5, the Division shall be notified of the actual test date at least ten (10) days prior to the test.
8. Pursuant to Section VII 1. (2 and 3) of the policy manual of the Division for Air Quality as referenced by 401 KAR 50:016, Section 1. (1), if a demonstration of compliance, through performance testing was made at a production rate less than the maximum specified in the application form, then the Permittee is only authorized to operate at a rate that is not greater than 110% of the rate demonstrated during performance testing. If and when the facility is capable of operation at the rate specified in the application, compliance must be demonstrated at the new production rate if required by the Division.

(e) Acid Rain Program Requirements

1. If an applicable requirement of Federal Statute 42 USC 7401 through 7671q (the Clean Air Act) is more stringent than an applicable requirement promulgated pursuant to Federal Statute 42 USC 7651 through 7651o (Title IV of the Act), both provisions shall apply, and both shall be state and federally enforceable.

SECTION G – GENERAL PROVISIONS (CONTINUED)

(f) Emergency Provisions

1. Pursuant to 401 KAR 52:020 Section 24(1), an emergency shall constitute an affirmative defense to an action brought for the noncompliance with the technology-based emission limitations if the Permittee demonstrates through properly signed contemporaneous operating logs or relevant evidence that:
 - a. An emergency occurred and the Permittee can identify the cause of the emergency; The permitted facility was at the time being properly operated;
 - b. During an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and
 - c. The Permittee notified the Division as promptly as possible and submitted written notice of the emergency to the Division within ten (10) working days of the time when emission limitations were exceeded due to the emergency. The notice shall include a description of the emergency, steps taken to mitigate emissions, and corrective actions taken.
 - d. This requirement does not relieve the source from other local, state or federal notification requirements.
2. Emergency conditions listed in General Condition (f)1 above are in addition to any emergency or upset provision(s) contained in an applicable requirement. [401 KAR 52:020, Section 24(3)]
3. In an enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency shall have the burden of proof. [401 KAR 52:020, Section 24(2)]

(g) Risk Management Provisions

1. The Permittee shall comply with all applicable requirements of 401 KAR Chapter 68, Chemical Accident Prevention, which incorporates by reference 40 CFR Part 68, Risk Management Plan provisions. If required, the Permittee shall comply with the Risk Management Program and submit a Risk Management Plan to:

**RMP Reporting Center
P.O. Box 3346
Merrifield, VA, 22116-3346**

2. If requested, submit additional relevant information to the Division or the U.S. EPA.

(h) Ozone depleting substances

1. The Permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR 82, Subpart F, except as provided for Motor Vehicle Air Conditioners (MVACs) in Subpart B:
 - a. Persons opening appliances for maintenance, service, repair, or disposal shall comply with the required practices contained in 40 CFR 82.156.
 - b. Equipment used during the maintenance, service, repair, or disposal of appliances shall comply with the standards for recycling and recovery equipment contained in 40 CFR 82.158.

SECTION G – GENERAL PROVISIONS (CONTINUED)

- c. Persons performing maintenance, service, repair, or disposal of appliances shall be certified by an approved technician certification program pursuant to 40 CFR 82.161.
 - d. Persons disposing of small appliances, MVACs, and MVAC-like appliances (as defined at 40 CFR 82.152) shall comply with the recordkeeping requirements pursuant to 40 CFR 82.166
 - e. Persons owning commercial or industrial process refrigeration equipment shall comply with the leak repair requirements pursuant to 40 CFR 82.156.
 - f. Owners/operators of appliances normally containing 50 or more pounds of refrigerant shall keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR 82.166.
2. If the Permittee performs service on motor (fleet) vehicle air conditioners containing ozone-depleting substances, the source shall comply with all applicable requirements as specified in 40 CFR 82, Subpart B, Servicing of Motor Vehicle Air Conditioners.

SECTION H - ALTERNATE OPERATING SCENARIOS

None

SECTION I - COMPLIANCE SCHEDULE

The Permittee shall submit a compliance plan for correcting/preventing wet gas compressor failures within thirty (30) days after issuance of the draft permit. The plan shall include all the different scenarios that could lead to a wet gas compressor failure and the measures which will be taken to avoid failures. The plan shall also include measures that will be taken to control emissions in case of failure.